



YASKAWA

DriveWizard Plus

Instruction Manual

To properly use the product, read this manual thoroughly.

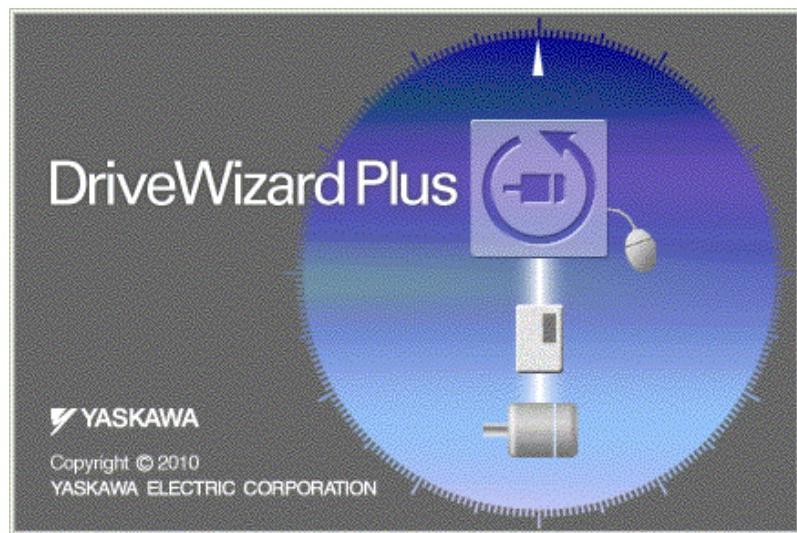


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Safety Symbols and Markings

The following conventions are used to indicate and classify safety precautions in this manual. Always heed the information provided with them. Failure to heed precautions can result in injury to people or damage to property.

DANGER
Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING
Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

Caution
Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury, or property damage.

Important
Indicates a property damage message.

Manual Overview

This manual has been written for those using DriveWizard Plus. Information covered in this manual includes:

- An overview of all functions used in DriveWizard Plus
- Instructions for installing and uninstalling DriveWizard Plus.

Related Manuals

Detailed technical documentation is available on Yaskawa drives and various drive options. Refer to this other documentation as needed.

Make sure that you have a proper understanding of all product specifications and restrictions when using this product.

Notes on Data Communications

Important
<ul style="list-style-type: none">DriveWizard Plus is not for use with any other communication-related devices not specified in this manual. Do not make any modifications to the drive, operator, software, or MEMOBUS/Modbus data. <p>Use of any other communication devices will involve data that does not agree or comply with DriveWizard Plus programming, and may not operate properly.</p>

About this Software

Notes on Usage

- This software is for installation to a single computer only. Authorization is required for use on another computer
- It is strictly forbidden to copy the software for any purpose other than as backup
- Store the CD-ROM in a safe, secure location
- It is strictly forbidden to reverse compile or reverse engineer this software
- It is strictly forbidden to loan, exchange, or trade this software to a third party
- Yaskawa Electric possesses all rights of copyright protection related to this software.

Operating System and Trademarks

Windows 2000, Windows XP, Windows Vista, and Windows 7 registered trade marks of Microsoft Incorporated.

Adobe Acrobat Reader is a registered trademark of Adobe.

Safety Notes and Instructions

Below is a list of important wiring instructions that must be followed carefully for safety and proper performance:

Cautionary Notes on Wiring

▲Note

- Use the proper cable when connecting the drive and DriveWizard Plus. Close and restart DriveWizard Plus if the cable is inserted during a session of DriveWizard Plus.

Using any other type of cable will void the warranty for the drive and software.

Notes on Use

▲Note

- Close and restart DriveWizard Plus if the power to the drive is turned off and then turned on.

Failing to do so will void the warranty for the drive and software.

1 System Overview

This section provides an overview of DriveWizard Plus and various features of the software

1.1 DriveWizard Plus Overview and Functions

DriveWizard Plus is a powerful engineering tool designed for advanced application setup and for performing maintenance tasks on a Yaskawa drive.

The advanced functionality of DriveWizard Plus assists all users with powering up the drive, test running the application, or performing maintenance.

Main functions:

- Editing parameters while taking advantage of useful help information
- Displaying drive operation status (I/O signals, internal status information, etc.) as well as product information
- Troubleshooting features, including possible causes for problems and other help options
- Test running the drive and application (both manual and pattern operation)
- Auto-Tuning features to optimize parameter settings
- Oscilloscope function.

NOTE: Some DriveWizard Plus functions may not be applicable for the specific drive model being used. Such functions will not be available when displayed in the menu toolbars.

1.2 System Environment

System requirements for running DriveWizard Plus are listed in the table below:

PC	PC/AT DOS/V compatible PCs *Yaskawa will not provide support when using NEC PC9821 series computers.											
CPU	Pentium 1 GHz or higher (1.6 GHz recommended)											
RAM	1 GB or more											
Hardware Disk Space	At least 100 MB (400 MB recommended at time of installation)											
Screen Resolution	XGA monitor (at least 1024 × 768 set for small fonts)											
Color Display	65535 colors (16 bit) or higher											
OS	English or Japanese OS ·Windows 2000 (ServicePack 1 or later), Windows XP, Windows Vista, and Windows 7											
Drive and PC Connection Cable	Yaskawa provides a RS-232C communications cable. <table border="1"> <thead> <tr> <th></th> <th>Drive Model</th> <th>Cable Model</th> </tr> </thead> <tbody> <tr> <td>Yaskawa cable</td> <td>G5 A1000, V1000, J1000, G7, F7, V7, J7, and Others</td> <td>Socket Connector Type W5250 Modular Connector Type WV103</td> </tr> <tr> <td>Other cable types</td> <td>G5 A1000, V1000, J1000, G7, F7, V7, J7, and Others</td> <td>Socket Connector Type UWR100-1 UWR103-1w/FLASH write cable Modular Connector Type UWR00468-2 UWR00468-1 with FLASH write cable</td> </tr> </tbody> </table> · SI-232/J7 option card required if using VS mini J7. · If using RS-422 or RS-485, be sure to use the proper cable included and perform all wiring as specified in the product manual and DriveWizard Plus instructions.				Drive Model	Cable Model	Yaskawa cable	G5 A1000, V1000, J1000, G7, F7, V7, J7, and Others	Socket Connector Type W5250 Modular Connector Type WV103	Other cable types	G5 A1000, V1000, J1000, G7, F7, V7, J7, and Others	Socket Connector Type UWR100-1 UWR103-1w/FLASH write cable Modular Connector Type UWR00468-2 UWR00468-1 with FLASH write cable
	Drive Model	Cable Model										
Yaskawa cable	G5 A1000, V1000, J1000, G7, F7, V7, J7, and Others	Socket Connector Type W5250 Modular Connector Type WV103										
Other cable types	G5 A1000, V1000, J1000, G7, F7, V7, J7, and Others	Socket Connector Type UWR100-1 UWR103-1w/FLASH write cable Modular Connector Type UWR00468-2 UWR00468-1 with FLASH write cable										
Other	More than one node requires a separate RS-232C, RS-422, or RS-485 interface. CD-ROM (for installation only) Adobe Acrobat Reader 6.0 *Required for displaying Help information											

NOTE: To install and uninstall DriveWizard Plus, the user must be logged in with administrator rights.

NOTE: Windows XP, Windows Vista, and Windows 7 users should take note of the following: Multiple users cannot log in simultaneously; only one user is allowed at a time.

NOTE: Some security and virus software may interfere with DriveWizard Plus and keep it from starting properly.

1.3 Installing DriveWizard Plus

Executing the DriveWizard Plus installation program will install the software. All files needed to install the software are included on the CD-ROM.

For proper software installation, be sure that all other programs have been closed.

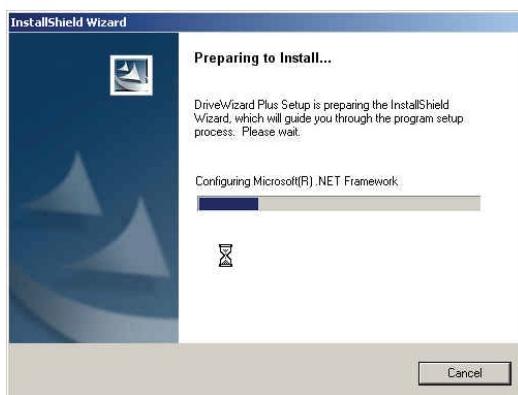
NOTE: To install DriveWizard Plus, the user must be logged in with administrator rights.

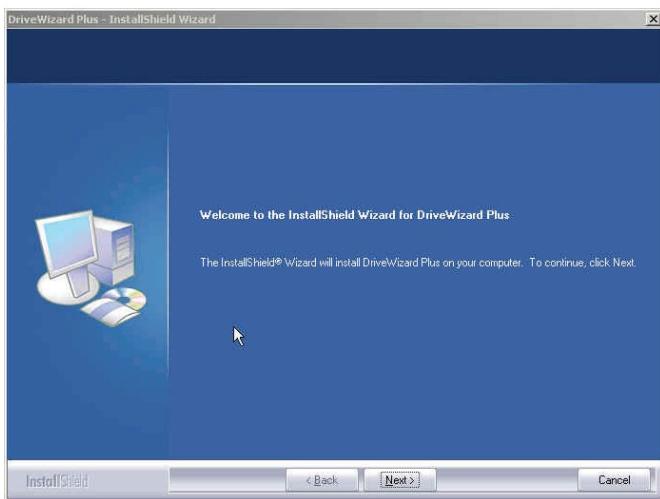
Follow the instructions below to install DriveWizard Plus:

- 1) Insert the CD into the CD-ROM drive. If the PC is set for autoplay, the installation program will open immediately. If the PC is not set for autoplay, follow the directions below to install DriveWizard Plus:
 - a) From the Start menu, select "Run," then enter "D:\SETUP.EXE" (the path for the CD drive). Click "OK".
 - b) From Windows® Explorer, select the CD-ROM icon then double-click on "D:\SETUP.EXE".
- 2) The Language selection dialog box will appear. Select the appropriate language (Japanese or English).

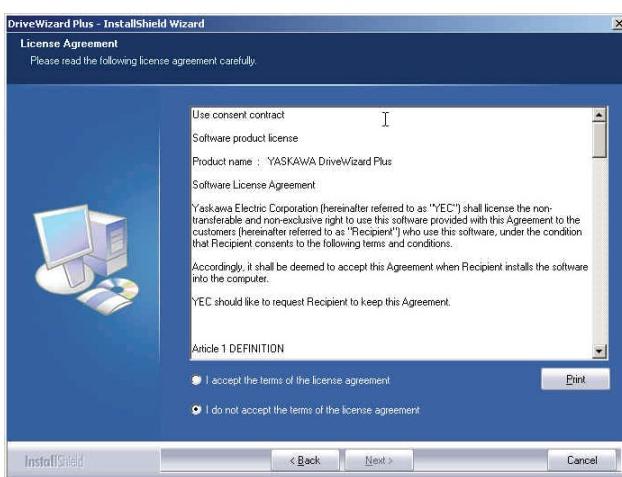


- 3) Click "OK" and DriveWizard Plus will prepare the InstallShield Wizard and then launch the InstallShield Wizard for DriveWizard Plus. Click the button marked, "Next" to begin installation.

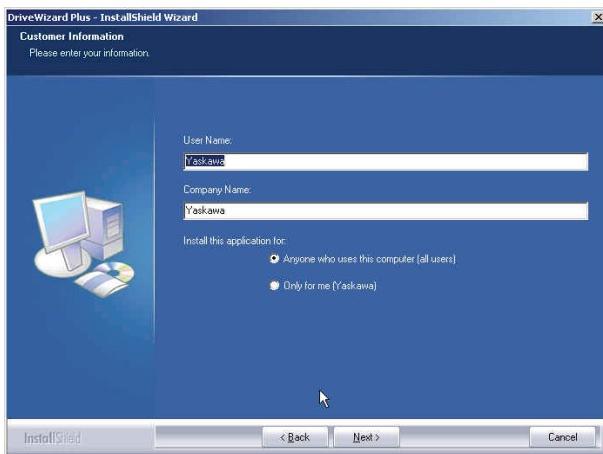




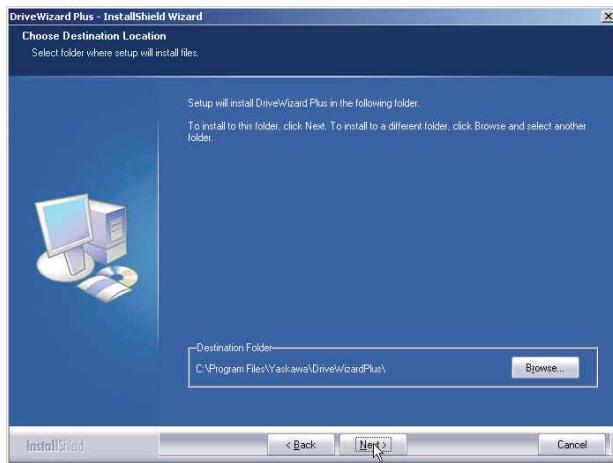
- 4) America software license agreement. You must accept the terms to proceed with the installation.
Click "Next" to continue.



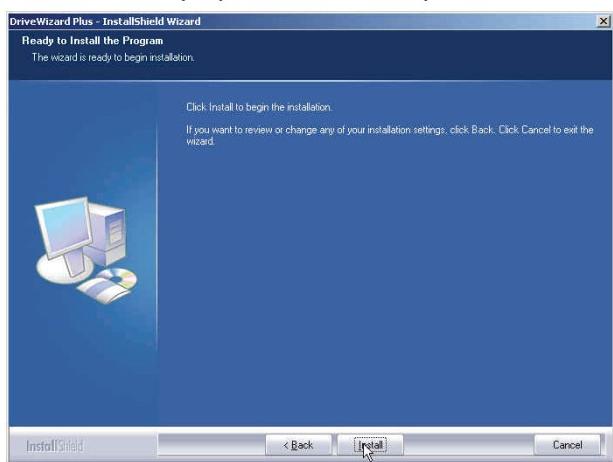
- 5) Enter the user information into the required fields. The User Name and company information are required for installation, registration, and use of the software. Click "Next" after the data has been entered.



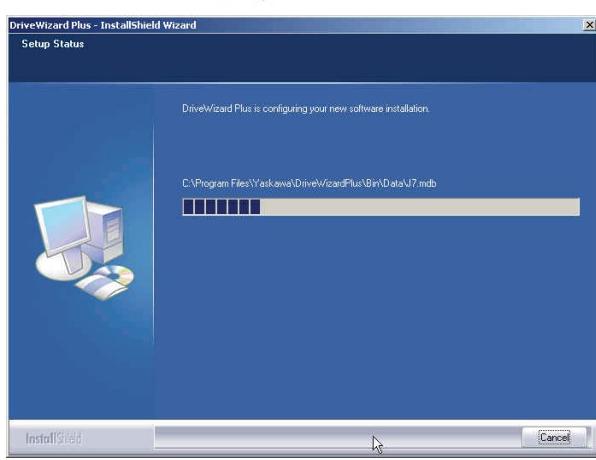
- 6) DriveWizard Plus asks for the software installation path. The default path will appear as:
C: Program Files\Yaskawa\DriveWizardPlus\. Click “Next”.



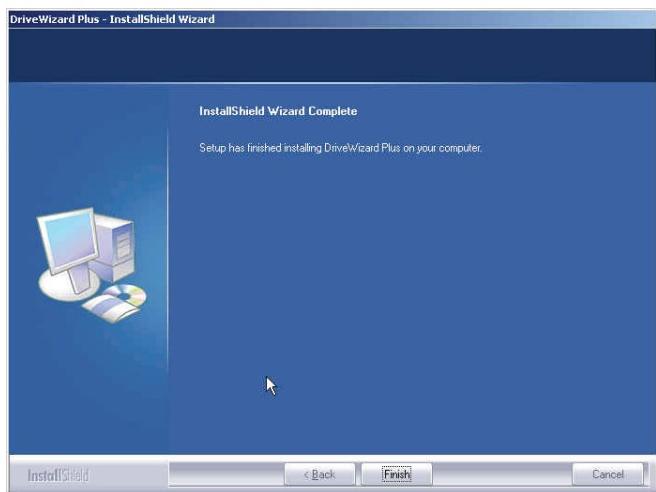
- 7) Once DriveWizard Plus is ready to be installed, a message will appear to indicate that installation preparations are complete. Click “Install” to install the software.



- 8) The required files will be installed and copied to the designated directory. A window will appear to indicate the progress of installation.



- 9) A message will appear to indicate that installation is complete. Click “Finish” to close the window.



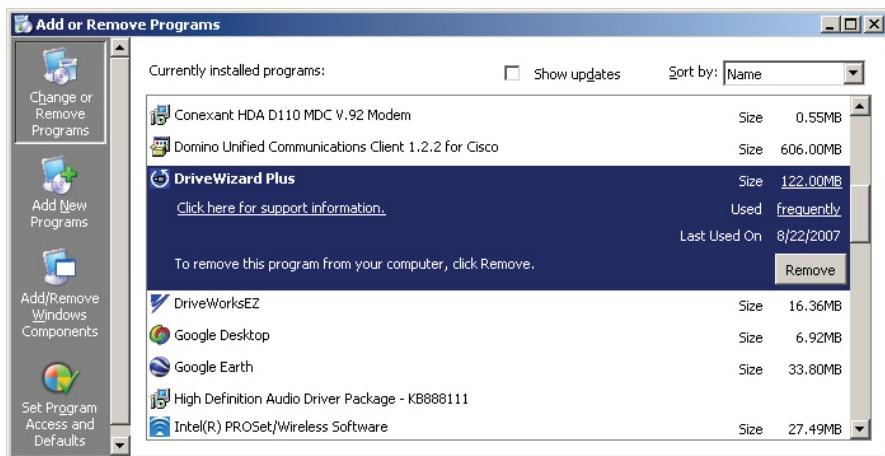
NOTE: A message may appear indicating that the PC requires restart for proper DriveWizard Plus installation. Follow the instructions and restart the computer.

1.4 Uninstalling DriveWizard Plus

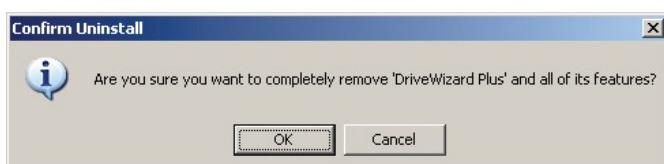
NOTE: Administrator privileges are required to uninstall DriveWizard Plus. Log in as the administrator to uninstall DriveWizard Plus.

Follow the procedure below to uninstall DriveWizard Plus:

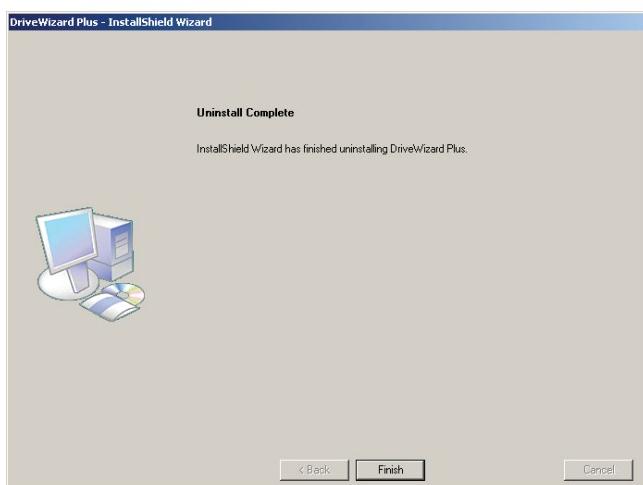
1. Open the Start menu in the Windows Task Bar.
2. Click on the “Settings” icon and open the Settings folder.
3. Click “Control Panel” and open the Control Panel folder.
4. Double-click on the “Add or Remove Programs” icon to open the following window:



5. Select DriveWizard Plus and click “Remove”. The following message will appear:



6. Click “OK” to execute the uninstall shield. When the program has been uninstalled, the following message will appear:



7. Click “Finish”.

2 Starting DriveWizard Plus

Follow the directions below to start using DriveWizard Plus:

2.1 Starting the Program

There are three ways to start a session of DriveWizard Plus:

- from the Start menu
- from a shortcut
- by double-clicking on a Project file.



2.1.1 Starting from the Start Menu

Follow these instructions to open DriveWizard Plus from the Start menu:

- 1) Open the Start menu in the Windows task bar.
- 2) Go to the Programming menu and open the Programming folder.
- 3) Open the folder marked “YE_Applications”.
- 4) Select “DriveWizard Plus”.

2.1.2 Starting from a Shortcut

Double-click on the shortcut marked “DriveWizard Plus”.

2.1.3 Double-clicking on a Project File

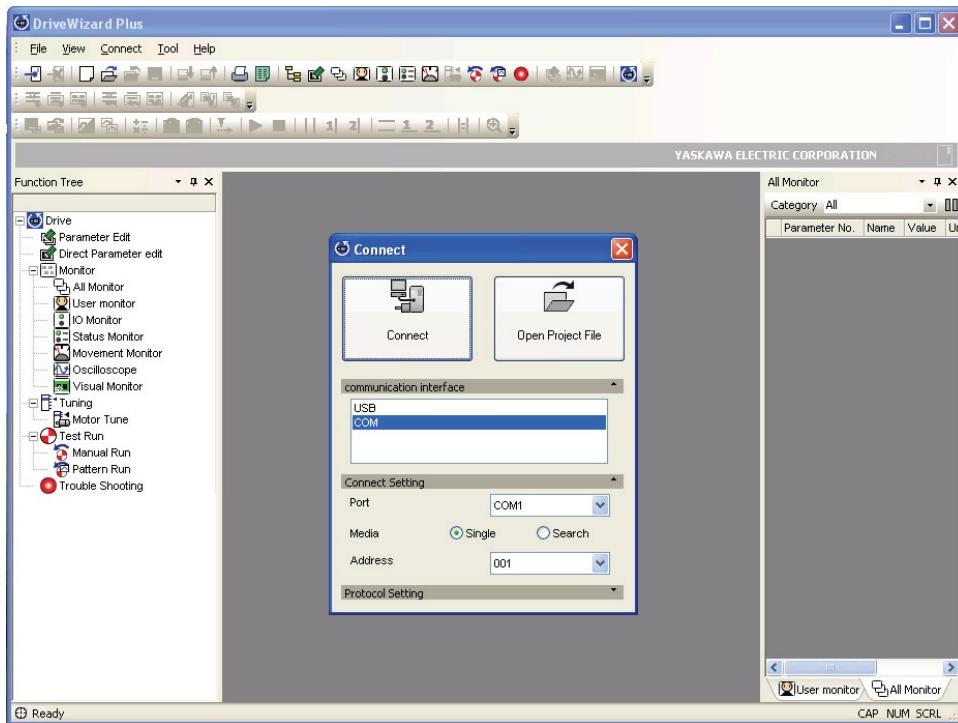
DriveWizard Plus can be opened by double-clicking on a Project file.

- 1) Open up Windows Explorer
- 2) Double-click on a Project file icon.

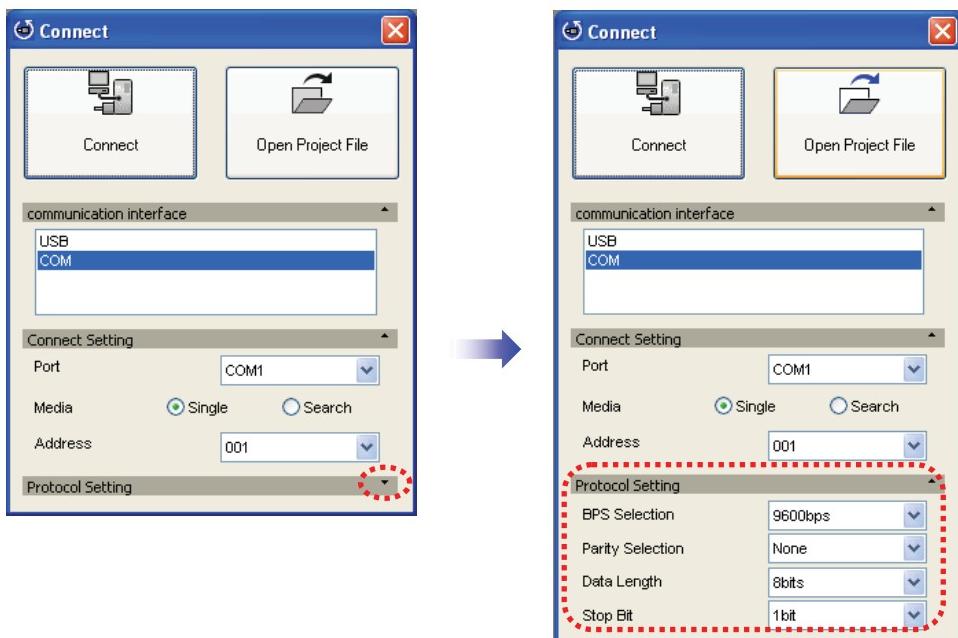
NOTE: A Project file saved to the desktop can also be used to open a session of DriveWizard Plus by double-clicking on that icon.

2.2 Connecting the Drive and PC via the Com Port

When DriveWizard Plus is first opened, the start up window shown below will appear on the computer monitor.



The first window to appear asks if the user would like to connect to a drive or open up a Project file.



Connect: PC connects to the drive to edit parameters and perform test run.

Open Project File: Drive does not necessarily need to be connected to edit a project file.

To connect a drive, DriveWizard Plus requires that certain data be entered for the “Connect Setting” and “Protocol Setting”.

1) Specify the Connect Setting

Port

Selects the com port for drive connection. DriveWizard Plus will list the com ports available for the PC being used. This display will vary by PC.

Media

Selects the media for setting the com address: Search or Single.

If you know the com address, enter it here. If not, select “Search” and DriveWizard Plus will automatically search for the address.

Address

Sets the com address for drive parameter settings.

This setting will be grayed out when “Search” has been selected for the media.

2) Selecting the Protocol Setting

Sets the communication speed for drive and PC. As these settings vary by drive model, refer to the instruction manual for proper settings.

BPS Selection

1200 bps, 2400 bps, 4800 bps, 9600 bps, 19200 bps, 38400 bps, 57600 bps, 76800 bps, 115200 bps

Parity Selection

None, Odd, Even

Data Length

7 bit / 8 bit

Stop bit

1 bit / 2 bit

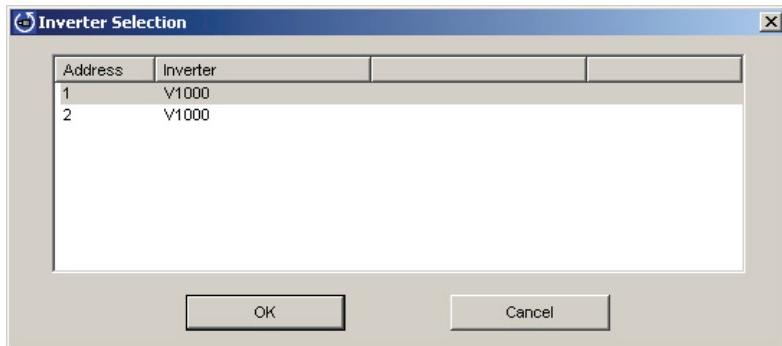
3) Select “Connect”

DriveWizard Plus will attempt to connect to the drive. Once successful, data for that drive will appear.

2.3 Connecting the Drive and PC

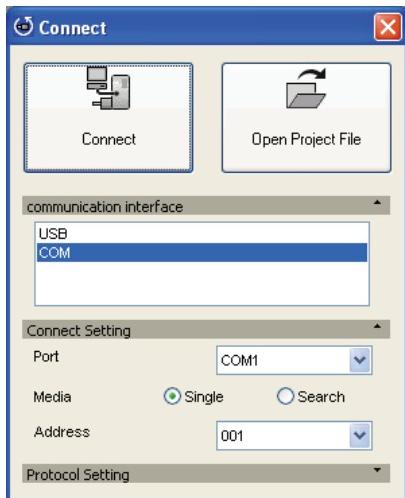
When the “Media” connection setting discussed in the previous section is set for search detection, DriveWizard Plus will automatically search all serial ports for any connections.

If DriveWizard Plus detects that more than one drive is connected, the following window will appear, showing the models and addresses of all drives that are connected.

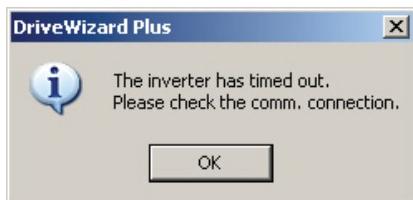


NOTE: This window will only appear when more than one drive is connected.

Use the window above to select which drive the current session of DriveWizard Plus will focus on and click “OK”. Clicking on “Cancel” will cause the following window to appear:



If DriveWizard Plus is unable to communicate with the drive, the window above will not appear and the following message will be displayed instead:



Regardless of whether the drive is connected to the PC, this message may appear if DriveWizard Plus is unable to properly communicate with the drive.

If the drive selection screen fails to appear, check the items listed in the table below:

Check	Comments
Is the power supply on?	
Is there a loose connection somewhere?	Make sure the com cable and the connector are properly fastened to the correct ports.
Is the correct com port selected?	The com cable should be connected to the same port specified in the Connect window.
Is the com address correct?	RS-232C and USB Make sure the com address that is set and the one you are trying to connect to are the same. RS-422/ 485 Check the drive parameter settings for the com address and make sure that the same com address has not been selected twice, and that "0" is not selected.
Is the RS-232C port enabled?	Notebook PCs may not supply enough power to the RS-232C port. Check the setting for the power supplied to the C port. Refer to the PC user's manual for information on setting the power supply.
Is the PC operating from a battery?	PC batteries may not supply the type of power needed for communications. Try switching to an AC power supply.
Is the wiring correct?	Check for correct wiring using the instructions that came with the com cable and the instruction manual for the drive.
Is the com cable the proper length?	<ul style="list-style-type: none"> • Try shortening the length of the com cable • Use a twisted pair shielded line • Check the length of the com cable (RS-232C: 3 m max).

If DriveWizard Plus still has difficulty connecting to the drive after verifying all of the items listed above, check the following:

- Are the communication-related parameters in the drive set for use with DriveWizard Plus?
 - Remember that any changes to communication-related parameters in the drive require that power be cycled in the drive for those new setting changes to take effect. Proper cycling of power means that LED indicators on the operator must completely extinguish before the power supply back on.
-

2.4 Managing Project Files

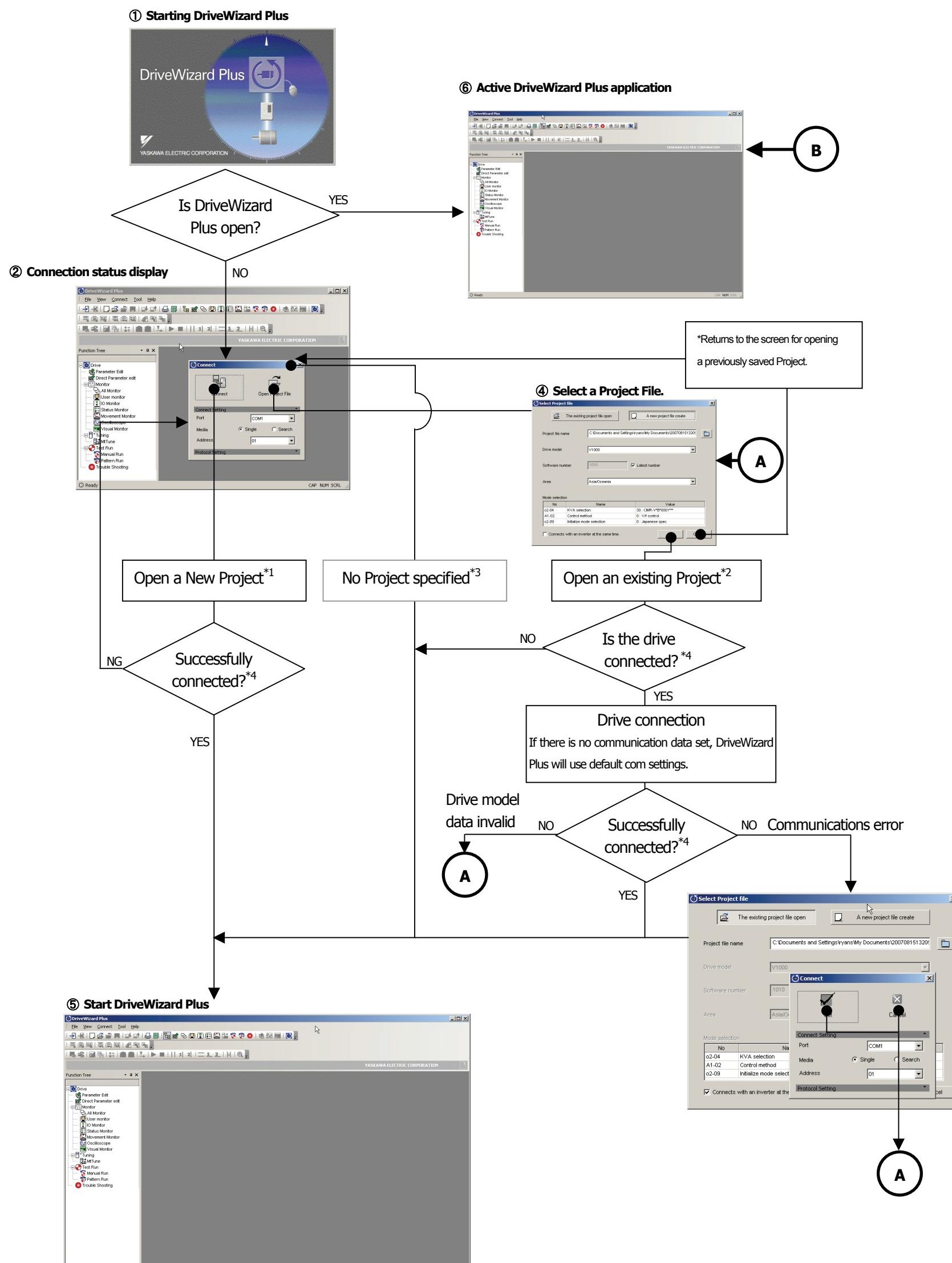
Data handled by DriveWizard Plus is organized into a Project.

Users can assign names to a Project.

A Project stores all connection data, drive functions, and data that have been edited into a single file to facilitate data tracking and portability.

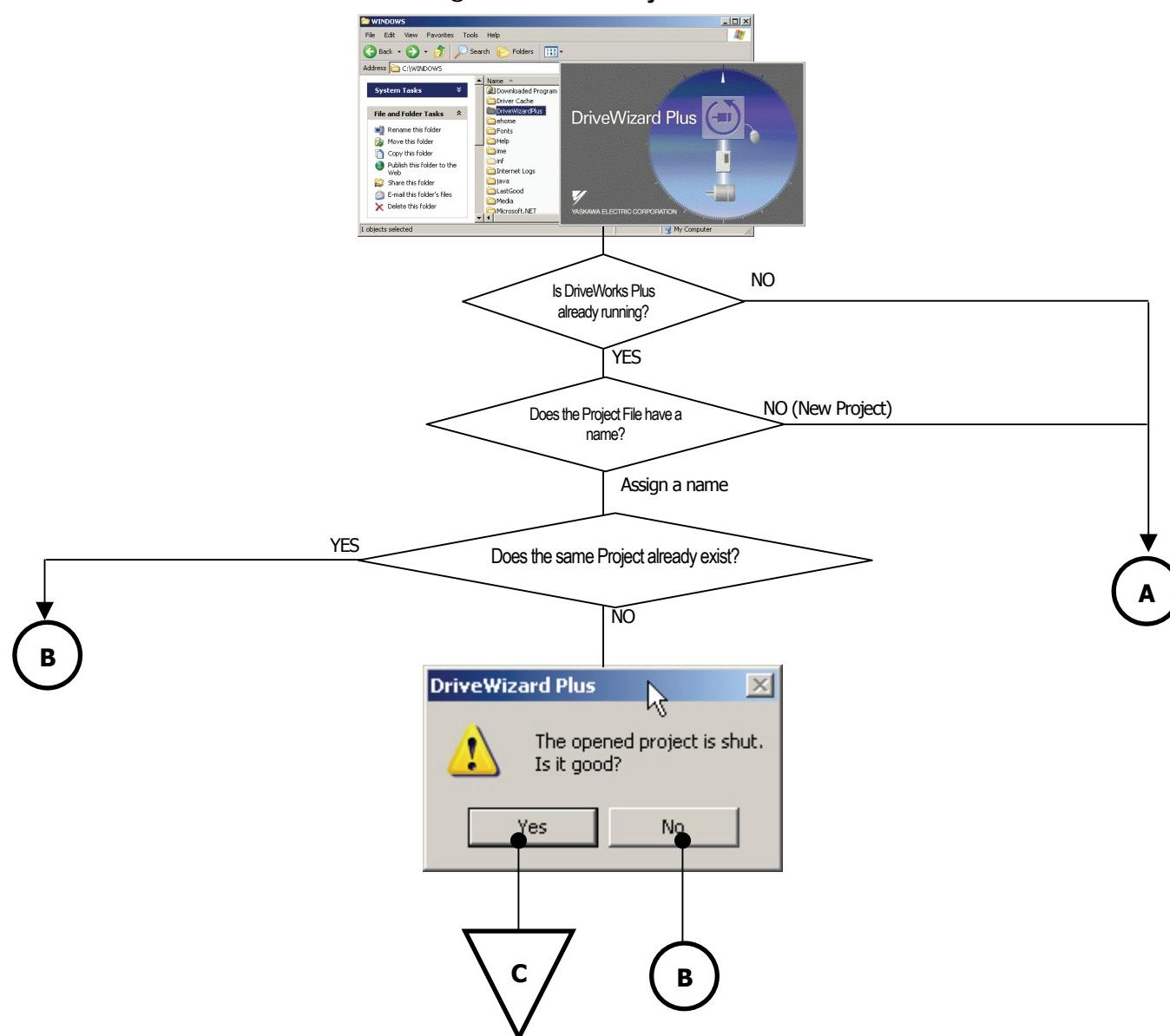
The flowcharts in the next section outline starting DriveWizard Plus, creating a Project, and quitting the program.

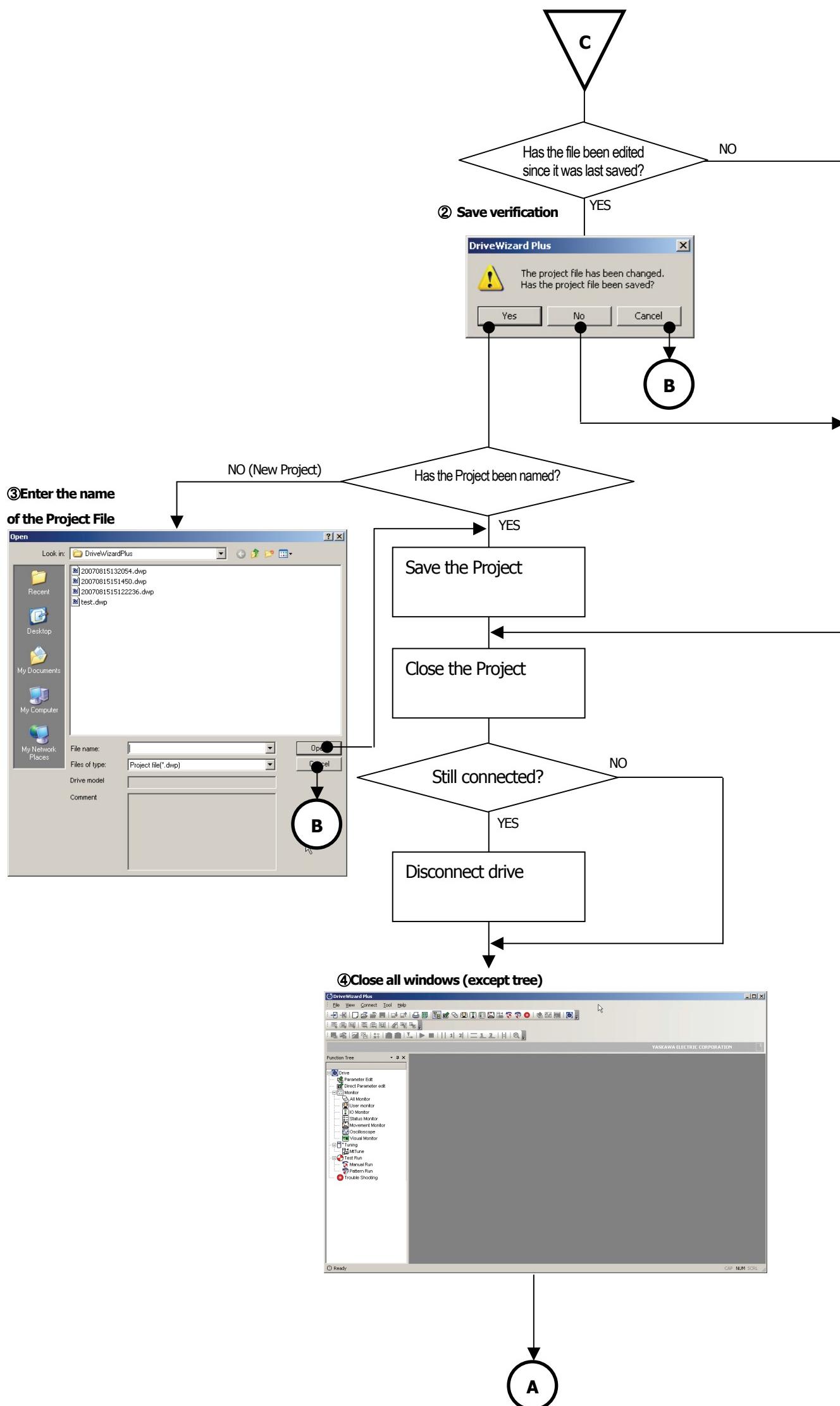
2.4.1 Starting DriveWizard Plus



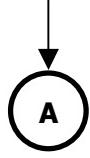
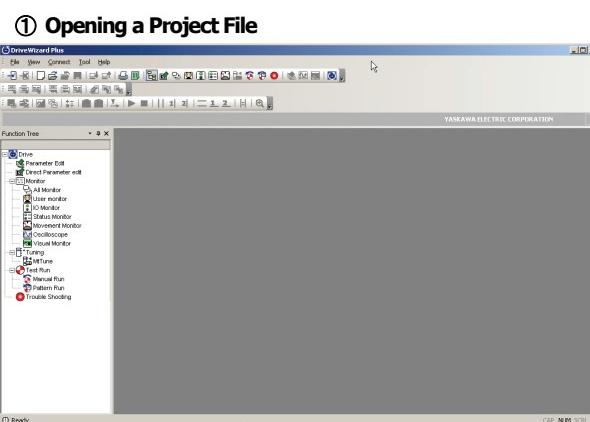
2.4.2 Double-clicking on a Project File from Windows Explorer

① Double click on a Project File.



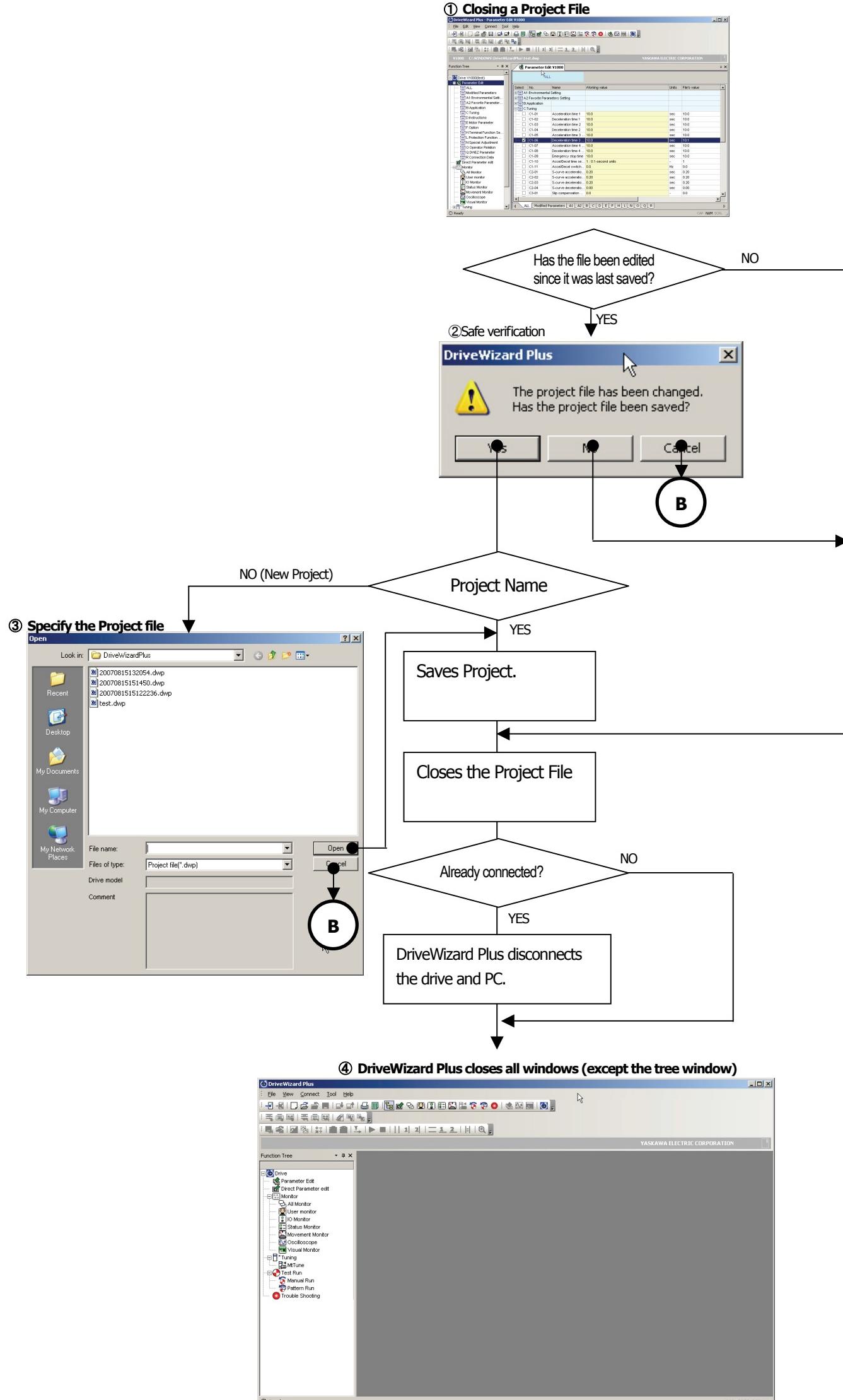


2.4.3 Opening a Project File

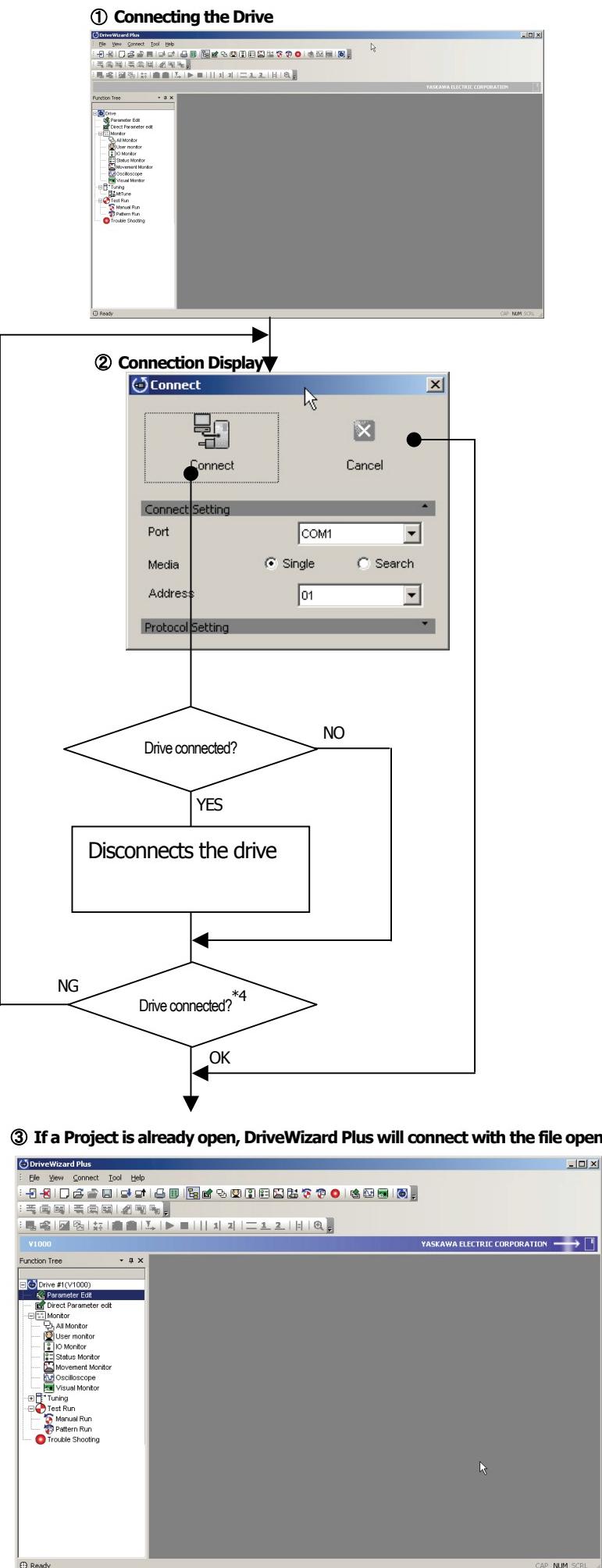


When a Project is already open, the "Project Open" selection on the menu is disabled so that only "New Project" can be selected.

2.4.4 Closing a Project File

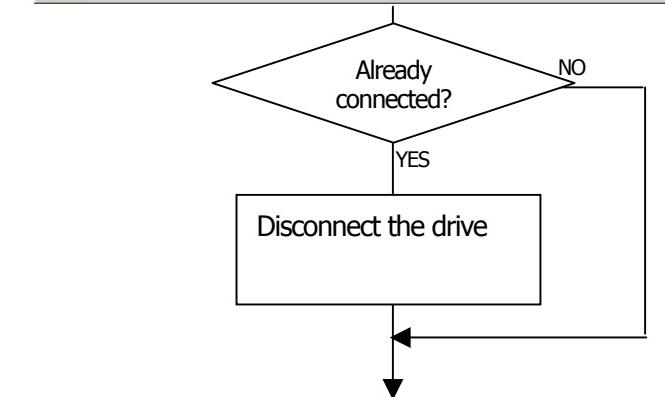
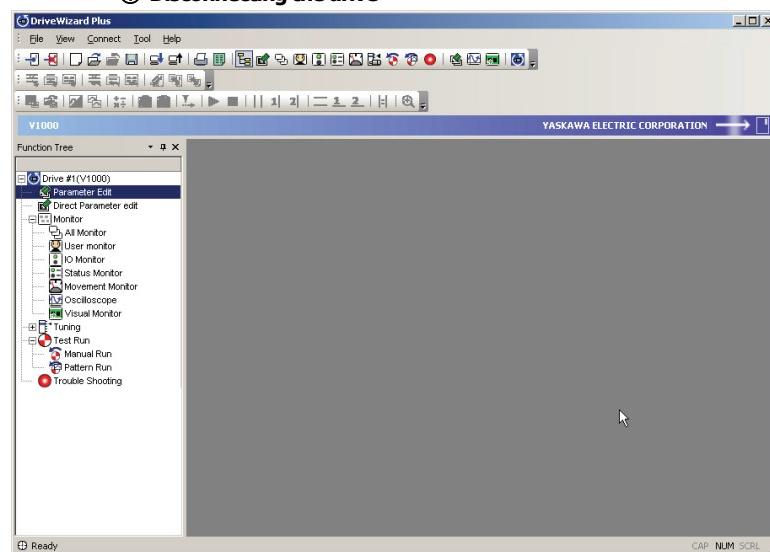


2.4.5 Connecting the Drive to the PC

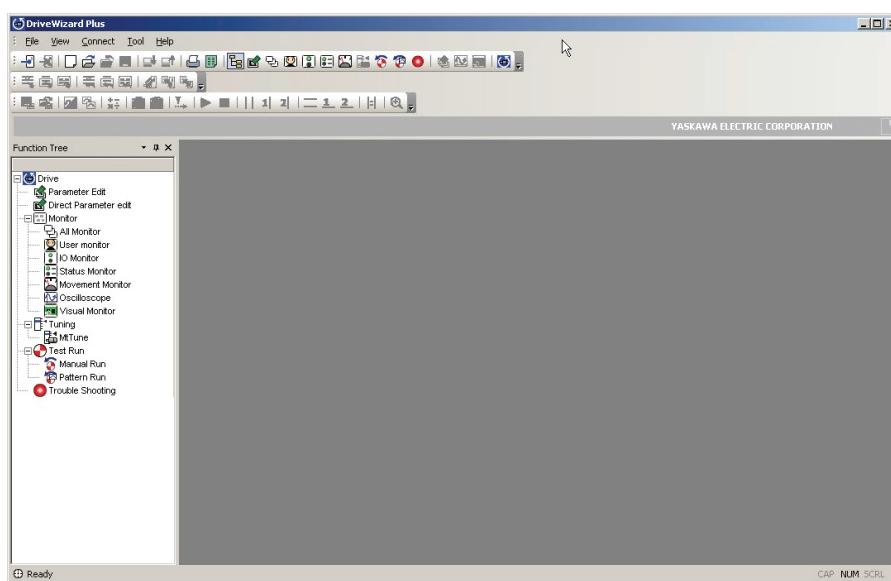


2.4.6 Disconnecting the Drive

① Disconnecting the drive

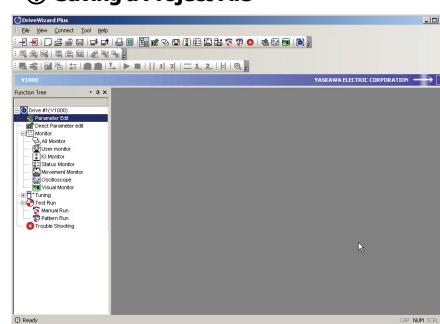


② If a Project File is open, DriveWizard Plus will disconnect the drive and leave the file open.



2.4.7 Saving a Project File

① Saving a Project File



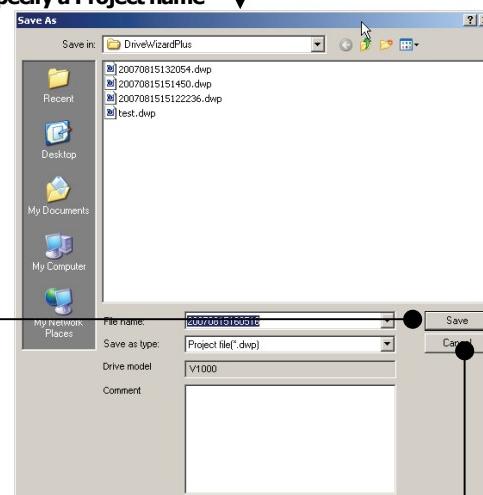
Does the Project File have a name?

YES

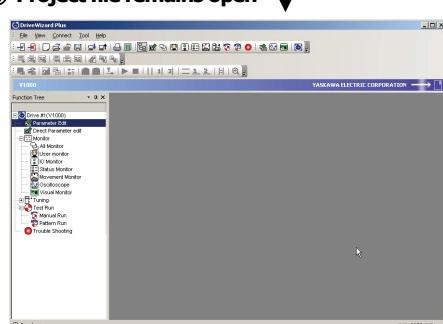
Save Project.

NO (New Project)

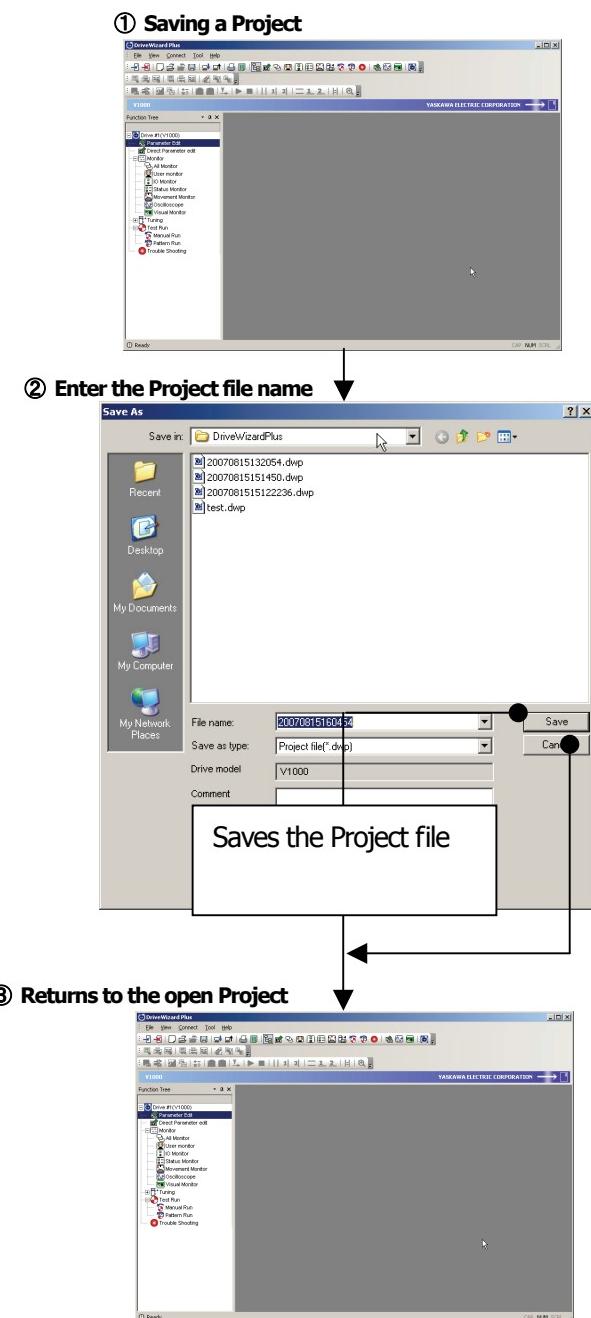
② Specify a Project name



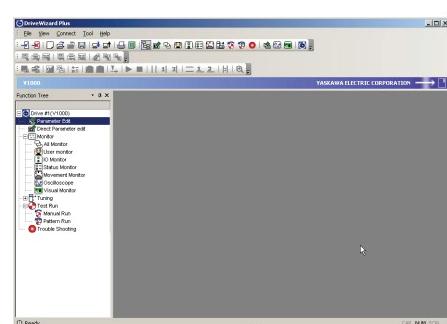
③ Project file remains open



2.4.8 Save Project File As



2.4.9 Quitting the Application



See "2.4.4 Closing a Project".

DriveWizard Plus
application closes.

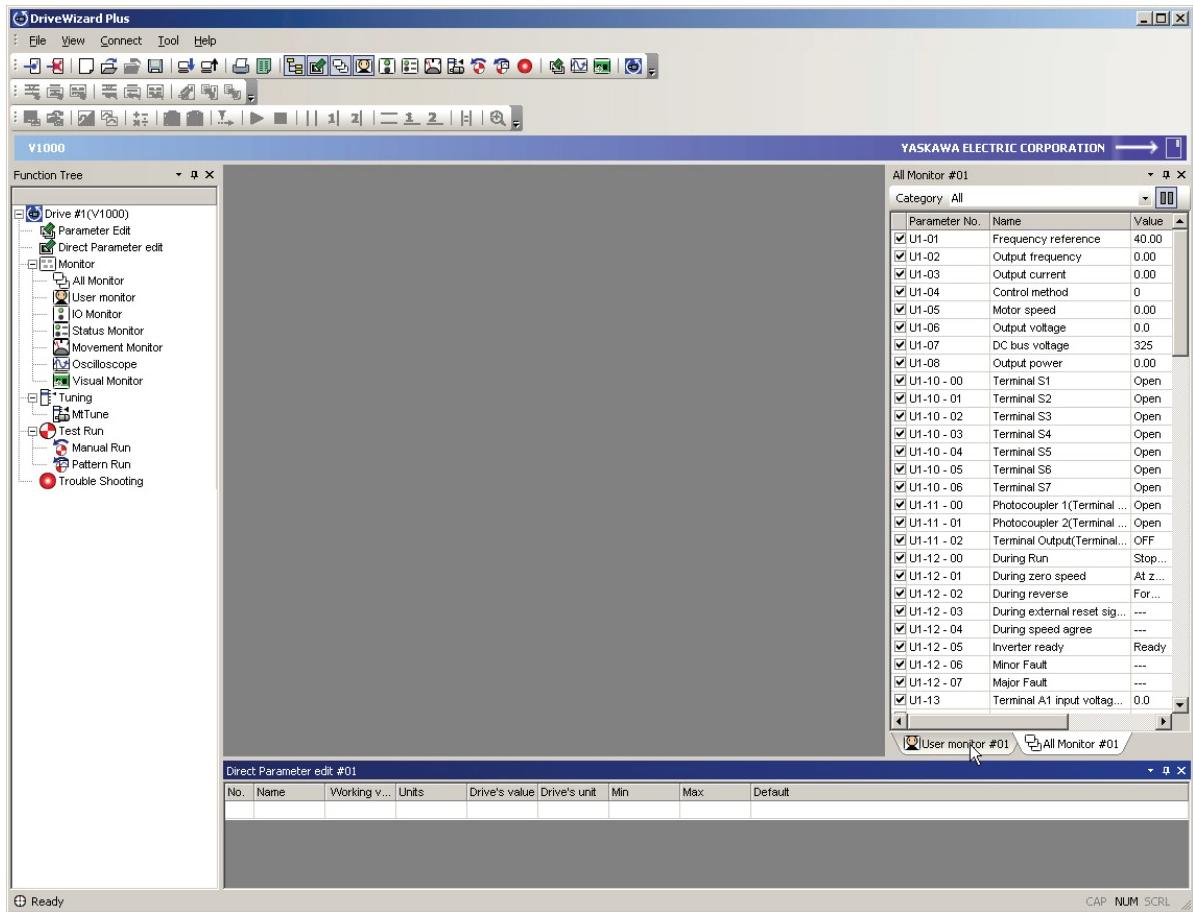
2.4.10 Managing Project Files with the Menu

Menu	Situation	Project already open		Project not yet opened	
		Drive Connected	Not Connected	Drive Connected	Not Connected
2.4.2 Creating a New Project		×	×	○	○
2.4.3 Opening a Project File		×	×	○	○
2.4.4 Closing a Project		○	○	×	×
2.4.5 Connecting to the Drive		×	○	×	○
2.4.6 Disconnecting the Drive		○	×	○	×
2.4.7 Saving a Project		○	○	×	×
2.4.8 Saving a Project As		○	○	○	×
2.4.9 Quit		○	○	○	○

○: Selection possible, × : Selection not possible.

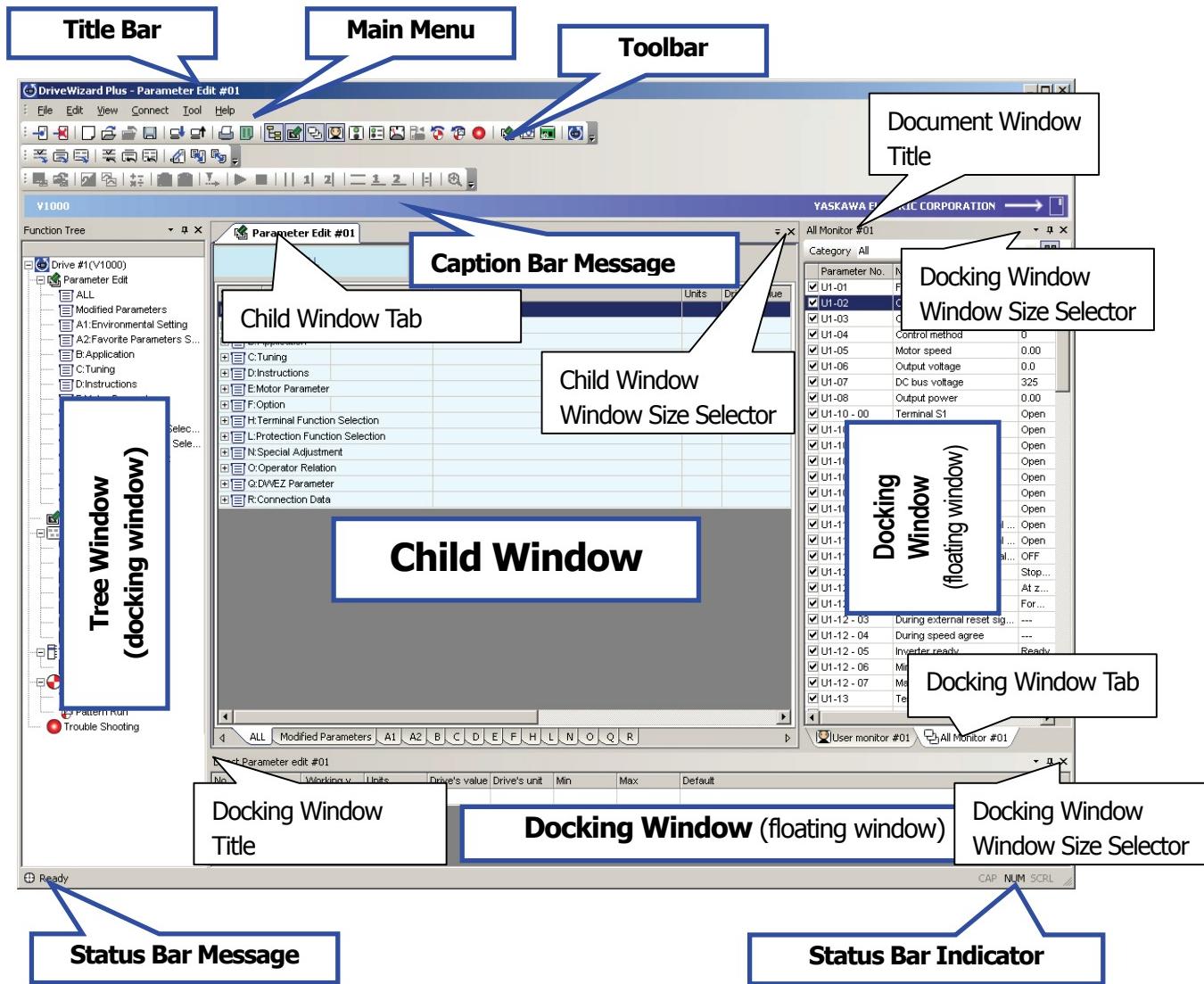
3 DriveWizard Plus Main Screen

The main screen when DriveWizard Plus is first opened appears below.



3.1 Screen Construction

The illustration below indicates the various windows, tabs, and toolbars that appear in the main screen.



3.1.1 Title Bar

The title bar in DriveWizard Plus shows all active child windows.



When no child windows are displayed

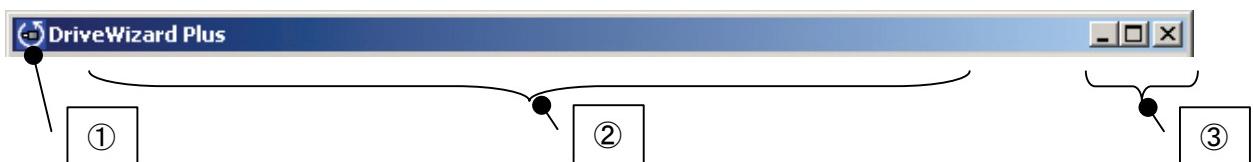


When the Parameter Display Screen is open as a child window



When the Oscilloscope Display is open as a child window

The title bar appears below:



NO.	DESCRIPTION
(1)	Displays the DriveWizard Plus icon.
(2)	Displays the name of the application (DriveWizard Plus) and information on the child window.
(3)	Minimizes or maximizes the size of the window.

3.1.2 Main Menu

Options available in the Main Menu in DriveWizard Plus appear below.

(1) Menu

MENU	DESCRIPTION
File (F)	For reading and writing data from a Project, displaying drive information, as well as importing and exporting files.
Edit (E)*1	This menu becomes available when using the Parameter Edit and Oscilloscope windows. *This menu is not available when not using a corresponding child window.
View (V)	Determines which function windows are displayed or not displayed.
Connection (C)	For connecting and disconnecting the drive.
Monitor (M)*1	For starting and stopping to trace drive performance with the Oscilloscope. *This menu is available only when using the Oscilloscope function.
Tools (T)*1	Opens the tools related to the current task.
Help (H)	Displays Help information, including the manual, drive data, and software version data.

*1: For a more detailed description of Menu items, see the description for each function that follows.

(2) File Menu

SUBMENU	DESCRIPTION
Create New Project (N)...	Creates a new Project.
Open Project (O)...	Open a Project that was saved earlier.
Save Project (S)	Saves the current Project.
Save Project As (A) ...	Saves the current Project under a new or different name
Close Project (L)	Closes the current Project. Closing a Project will disconnect the drive if connected.
Drive Data (D)...	Displays data from the drive when the drive is connected.
Import (I)...	Imports items as selected in the active window. Imports files created in an older version of DriveWizard.
Export (E)...	Exports items selected in the active window.
Print Settings (P)...	Changes settings for print out.
Environment setup (V)...	For various program environment settings (how data is saved, use of filters, etc.).
(Project History)	Displays a list of the five most recently opened Projects.
Quit (X)	Close the current session of DriveWizard Plus

(3) Display Menu

SUBMENU	SELECTION	DESCRIPTION
Function Tree	<input type="radio"/>	Displays the Function Tree.
Direct Parameter Edit	<input type="radio"/>	Opens the Direct Parameter Edit window.
All Monitors	<input type="radio"/>	Displays all monitors.
User Monitor	<input type="radio"/>	Displays user monitors only.
I/O Monitor	<input type="radio"/>	Displays the input and output monitors.
Status Monitor	<input type="radio"/>	Displays the Status Monitor.
Operation Monitor	<input type="radio"/>	Displays the Operation Monitor.
Manual Operation	<input type="radio"/>	Displays the window for performing Manual Run.
Pattern Operation	<input type="radio"/>	Displays the window for performing Pattern Run.
Troubleshooting	<input type="radio"/>	Shows the Troubleshooting window.
Results List	<input type="radio"/>	Displays the results after comparing parameters.
Drive Replacement	<input type="radio"/>	Displays the function for replacing the drive with a different model.
Conversion Results	<input type="radio"/>	Displays the results after performing a Parameter Conversion.
Motor Parameter Auto-Tuning	—	Begins the Auto-Tuning process.
Visual Monitor	—	Displays the Visual Monitors. Exclusive functions for the V1000 and J1000 series ^{*2}
Parameter Edit	—	Opens the window for editing parameters.
Oscilloscope	—	Displays the Oscilloscope window.
Toolbar (T)	—	Displays or hides the toolbar.
Standard (S)	<input type="radio"/>	Displays or hides the standard toolbar.
Parameter Edit (E)	<input type="radio"/>	Displays or hides the toolbar for editing parameters.
Oscilloscope (O)	<input type="radio"/>	Displays or hides the Oscilloscope toolbar.
Customize (C)...	—	Opens the window for customizing the menu and toolbar.
Language ^{*2}	—	For selecting which language to display.
English	—	Displays English only. Japanese is displayed only when Japanese has been selected.
Japanese	—	Displays Japanese language settings. Displays that have been saved in English can still appear in English.

***2: Changing the Language Selection requires restarting DriveWizard Plus.**

(4) Connect Menu

SUBMENU	DESCRIPTION
Connect Inverter (C)...	Connects the drive to the PC. *If already connected, this selection will read, "Reconnect (R)".
Disconnect Inverter	Disconnects the drive that is currently connected. *This selection is only available when a drive is connected.

(5) Tool Menu

SUBMENU	DESCRIPTION
DriveWorksEZ (E)	Opens DriveWorksEZ. *Requires that DriveWorksEZ be installed separately.
Drive Replacement (R)	For updating or replacing a drive with a different model.

(6) Help Menu

SUBMENU	DESCRIPTION
DriveWizard Plus Manual (M) ...	Opens the instruction manual for DriveWizard Plus.
Inverter Help (I) ...	Offers Help information on various drives.
Version Data (A)...	Displays the version of DriveWizard Plus currently installed.

(7) Edit Menu (Parameter Edit)

Submenu	Description
Write selected parameters (S)	Writes the value for the selected parameters to the drive.
Write group (G)...	Writes the setting values for the entire group of parameters selected to the drive.
Select All Parameters (A)	Writes the setting values for all parameters to the drive.
Read selected parameters (E)	Read the parameters selected from the drive that is connected.
Read Group (R)...	Reads the specified group of parameters from the drive.
Read All Parameters (L)	Reads all parameters from the drive.
Drive initialized (I)...	Initializes the drive.
Drive Compare (C)	Compares parameters settings in the current Project with parameter settings stored in the drive that is connected. This option is disabled when no drive is connected.
File Compare (F)...	Compares the parameter settings in the current Project with another Project or parameter file.

3.1.3 Toolbars

A list of toolbars in DriveWizard Plus appears below.

Standard Toolbar



ICON	FUNCTION
	Connects to the drive.
	Disconnects the drive.
	Creates a new Project.
	Opens an existing Project.
	Closes the Project currently open.
	Saves the Project.
	Imports the data selected.
	Exports the data selected.
	Prints the current document.
	Opens the Environment setup window.
	Displays the Function Tree window.
	Displays the Direct Edit window.
	Displays the All Monitor function.
	Displays the User monitor.
	Displays the I/O Monitor function window.
	Shows the Status Monitor.
	Shows the Operation Monitor.
	Executes Auto-Tuning.
	Shows the Manual Run window.
	Shows the Pattern Run window.
	Displays information for Trouble-Shooting.
	Displays the Parameter Edit window.
	Displays the Oscilloscope.
	Shows the Visual Monitor window.
	Shows software version information.

Parameter Edit Toolbar



ICON	FUNCTION
	Saves the selected parameter to the drive.
	Saves an entire group of parameters to the drive.
	Saves all parameters to the drive.
	Reads the selected parameter.
	Reads a group of parameters from the drive.
	Reads all parameters from the drive.
	Initializes the drive.
	Compares settings in the drive.
	Compares a file.

Oscilloscope Toolbar



ICON	FUNCTION
	Saves the data that was collected.
	Reads data that was collected.
	Switches the background color and the waveform color.
	Copies an image of the waveform.
	Displays the calculations toolbar.
	Takes a snapshot of the data selected.
	Erases the snapshot data.
	Displays the Trigger Conditions Setting dialog box.
	Starts monitoring drive performance.
	Stops monitoring drive performance.
	Switches to the vertical cursor display.
	Sets the V1 vertical cursor.
	Sets the V2 vertical cursor.
	Switches to the horizontal cursor display.
	Sets the H1 horizontal cursor.
	Sets the H2 horizontal cursor.
	Moves the cursor.
	Enlarges the waveform display.

3.1.4 Caption Bar

The Caption bar shows the connection status with the drive.

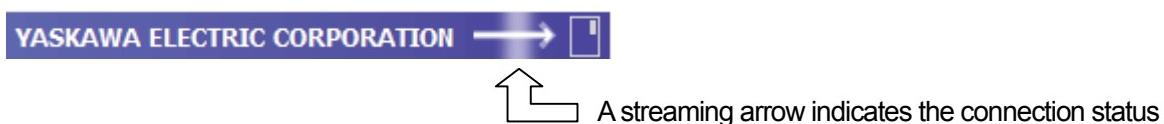
When the drive and PC are not connected:



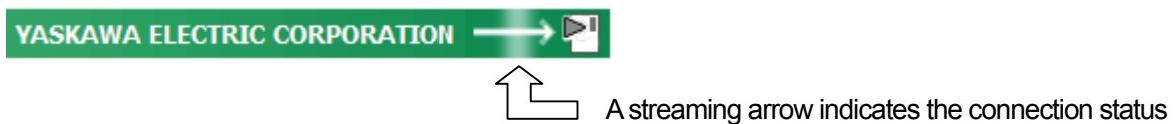
The following displays appear when the drive and PC are connected:

When properly connected, the Caption bar will display:

The drive is stopped:



During run:

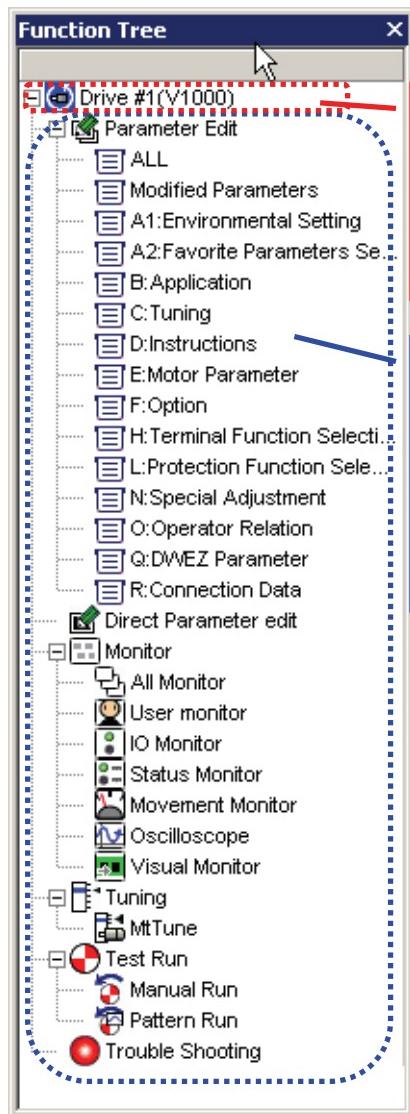


The following displays indicate that there is a problem with the connection:



3.1.5 Tree Window

All functions in DriveWizard Plus can be executed from the Function Tree window.



Displays information regarding the Project that is currently open.
Drive data also appears when connected to the drive. If no drive is connected, then the display will show data for the drive the Project has been assigned to.

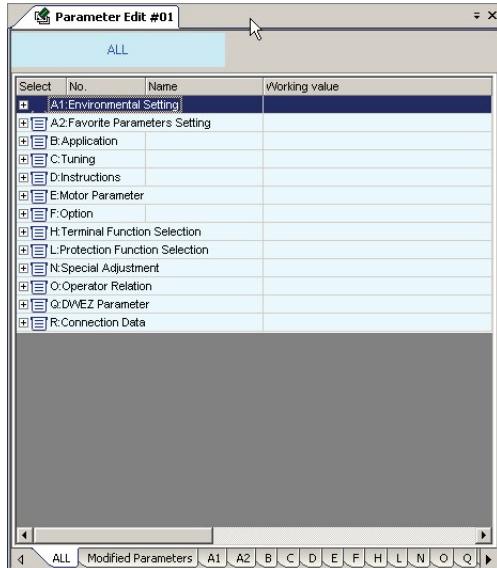
Displays the Function menu.
Functions are listed by category. By double clicking on an item in the tree, a function window that corresponds to that menu item will appear.
If a window for that function is not already open, a new window will appear.

Right-clicking on the nodes in the display screen will cause a context menu to appear.
 Most menus read “Open (O)” while others offer more functions.

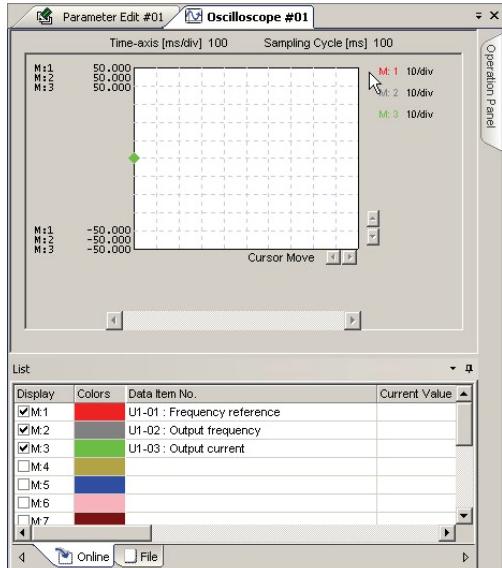
No.	Item	Menu	Operation Description
1	Root	Inverter information (I)...	Displays data read from the drive.
		Connect Inverter (C)	Connects the drive and PC.
		Disconnect Inverter (D)	Disconnects the drive from the PC.
2	Parameter Edit	Open (O)	Opens the Parameter Edit window.
		User Parameter (U)...	Opens the User Parameter setting window.
3	Direct Parameter Edit	Open (O)	Opens the Direct Parameter Edit window.
4	Monitor	—	—
5	All Monitors	Open (O)	Opens a window displaying all monitors.
6	User Monitor	Open (O)	Opens the User Monitor window.
		Monitor item setting (M)...	Opens the Monitor Item Setting Dialog
7	I/O Monitor	Open (O)	Opens the I/O Monitor window.
8	Status Monitor	Open (O)	Opens the Status Monitor window.
9	Movement Monitor	Open (O)	Opens the Movement Monitor window.
		Monitor item setting (M)...	Opens the Monitor Item Setting toolbar.
10	Oscilloscope	Open (O)	Opens the Oscilloscope screen.
11	Visual Monitor	Open (O)	Opens the Visual Monitor screen.
12	Tuning	—	—
13	Motor Parameter Auto-Tuning	Open (O))	Opens the Motor Parameter Auto-Tuning screen.
14	Trial Run	—	—
15		Manual Operation	Opens the Manual Run window.
16		Pattern Operation	Opens the Pattern Run window.
17	Troubleshooting	Open (O)	Opens the Troubleshooting window.

3.1.6 Child Window

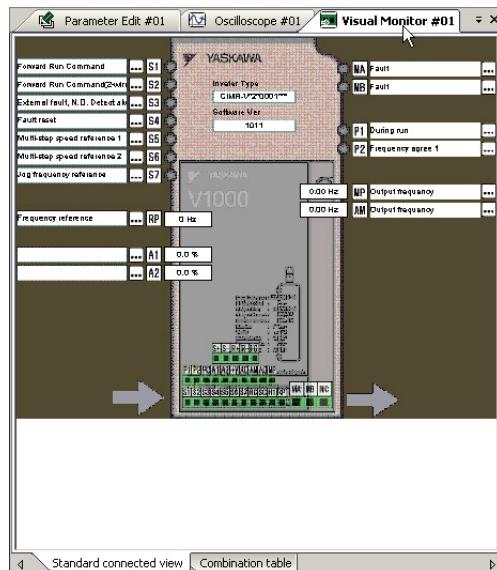
The Parameter Edit screen, Oscilloscope, and Visual Monitor functions are displayed in child windows as shown below.



Parameter Edit Window



Oscilloscope Window

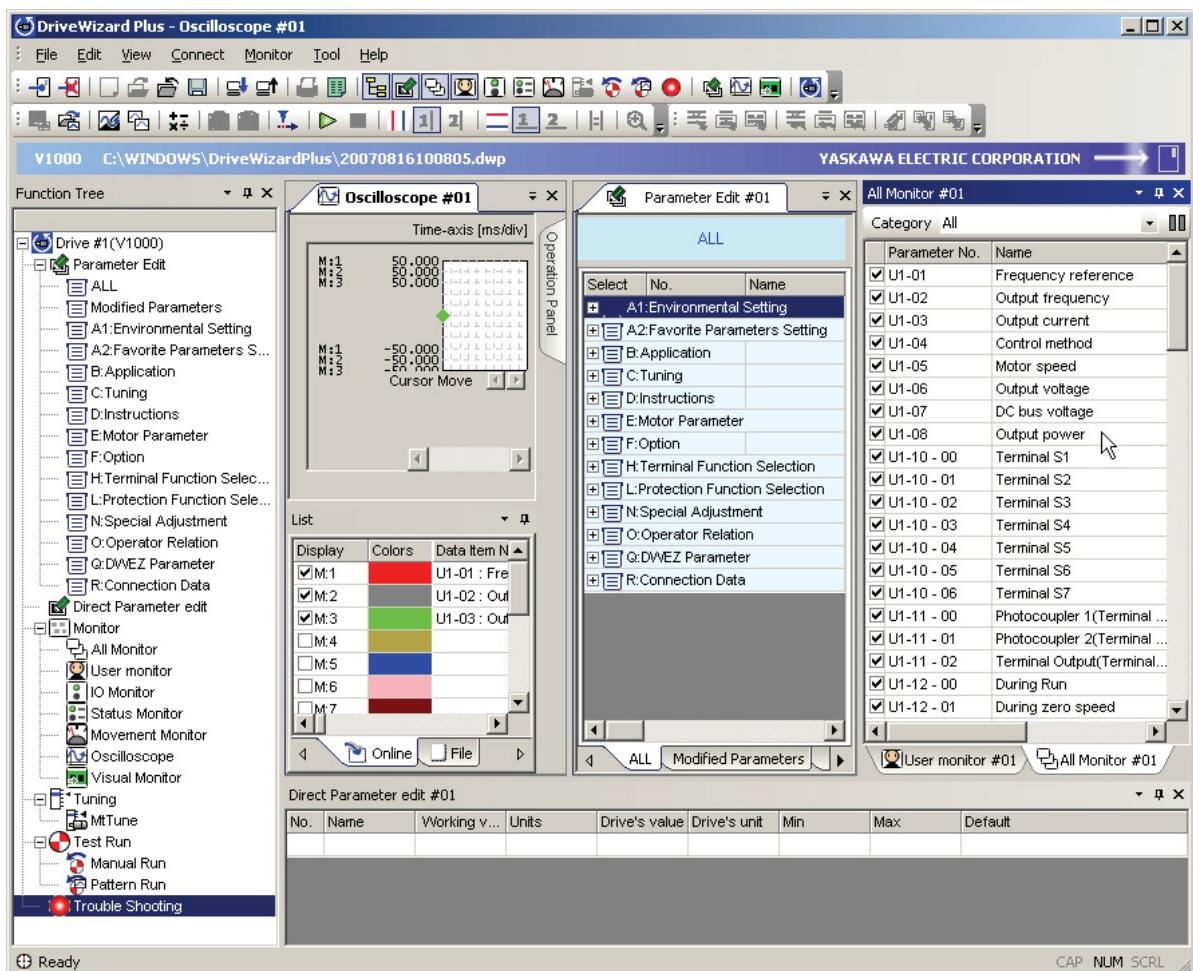


Visual Monitor Window

You can switch between displays by clicking on the tabs in the child window, including the Parameter Display window, Oscilloscope, and Visual Monitor functions.

You can also change the screen layout so that the various windows are stacked horizontally or vertically.

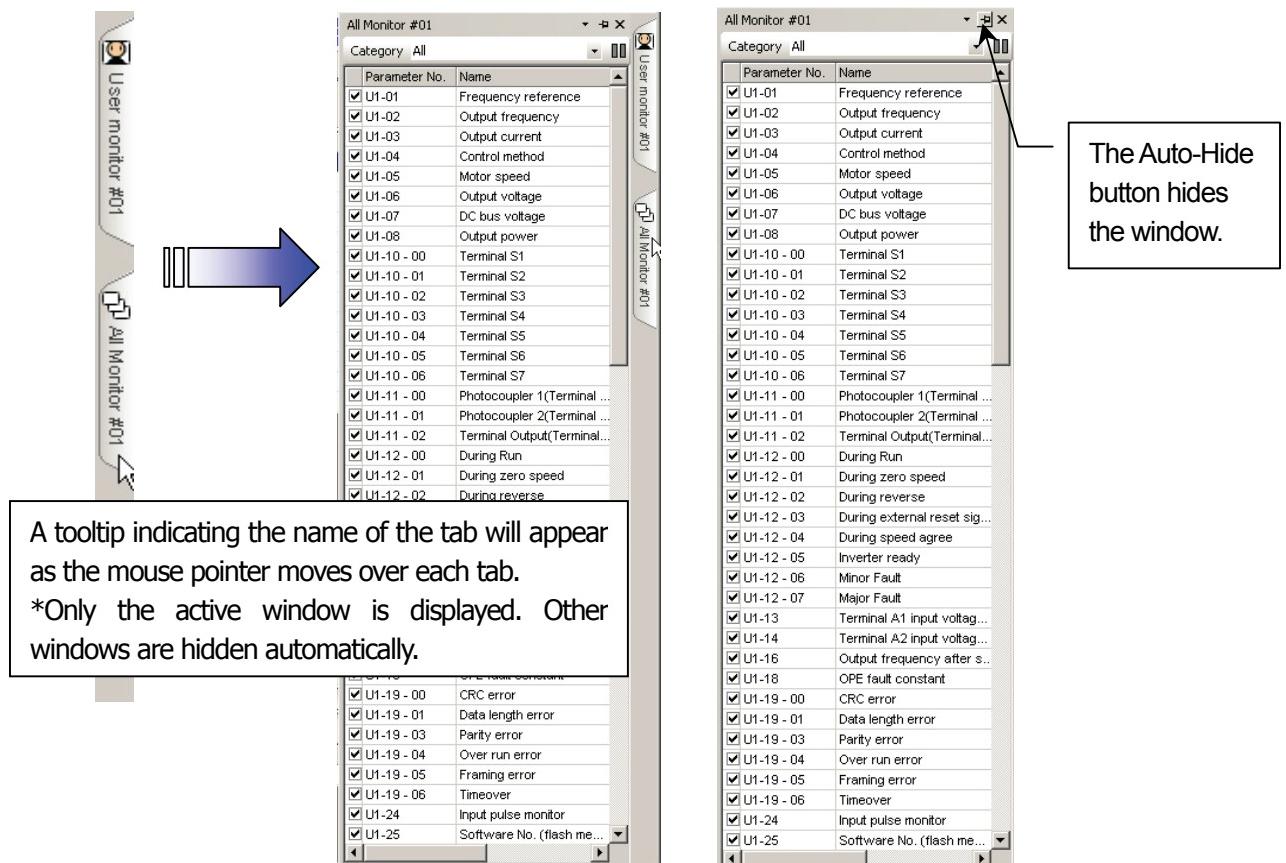
Example of screen layout:



3.1.7 Docking Windows and Floating Windows

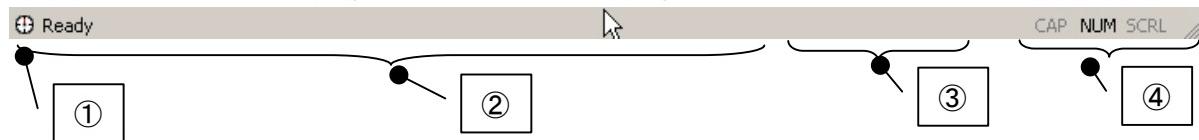
Monitor, Manual Run, Pattern Run, and Troubleshooting functions are displayed as docking windows. These windows can be separated from one another to become floating windows.

When windows are docked together, other windows may be hidden with the auto-hide function.

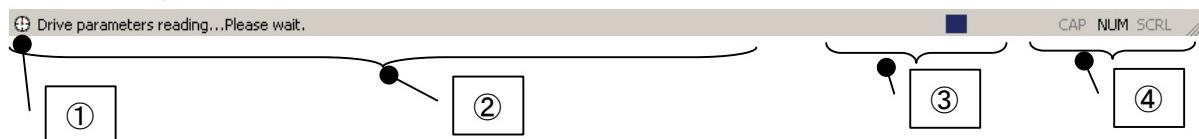


3.1.8 Status Bar

The Status Bar shows the progress of the command being executed.



When reading parameters from the drive:



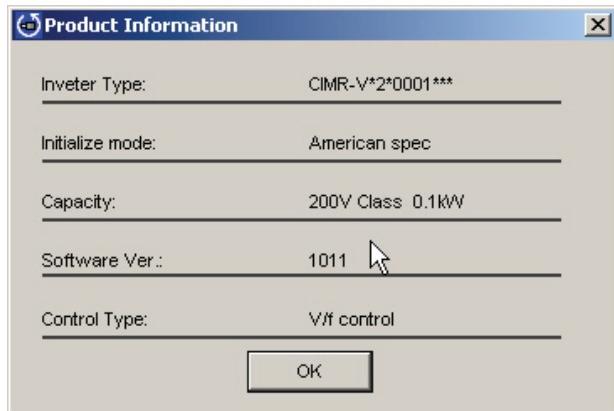
No.	Description
①	Icon appears to indicate the status of DriveWizard Plus.
②	Text to indicate the current status of DriveWizard Plus appears here.
③	Progress bar is displayed while the command is executed.
④	Indicates the keyboard status of the Caps Lock, Num Lock, and Scroll Lock keys.

4 Editing Drive Data

4.1 Drive Model Data Display

You can display information on the connected drive by selecting "File (F)" in the Main Menu → "Inverter information (I)...", or by right-clicking on the Function Tree "Drive (number)" and selecting "Inverter information (I)...” in the menu.

NOTE: No data is displayed if the drive is not online.



4.2 Parameter Edit

There are two ways to edit parameters:

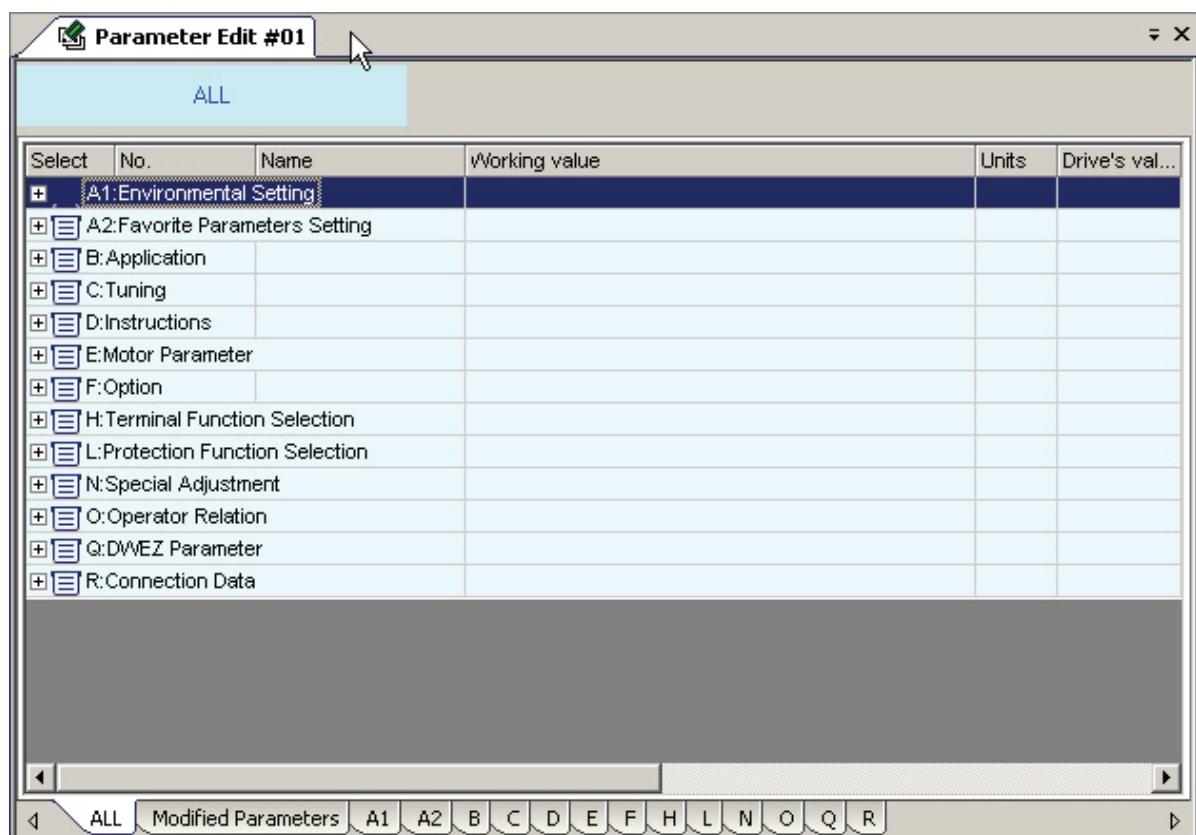
- Parameter Edit window
- Direct Edit window

4.2.1 Parameter Edit Window

The Parameter Edit window lets you change and edit parameter settings.

4.2.1.1 Online Parameter Edit Screen

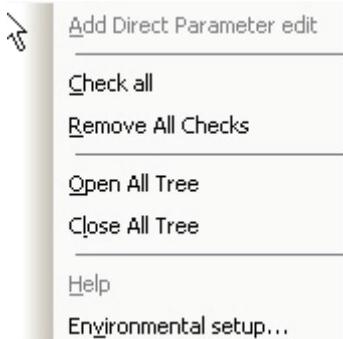
Double-clicking on “Parameter Edit” in the Function Tree makes the Parameter Edit window appear.



Pop-Up Menu in Parameter List

Right-clicking on the Parameter List will display a pop-up menu. The selection available will vary depending on the tabs that are currently active.

When all parameter tabs are active:



Add Direct Parameter edit

Lets you add parameters selected in the parameter list to the Direct Parameter Edit window.
For instructions on the Direct Parameter Edit function, see 4.2.2.

Check All

Selects all parameters, including those not displayed in the active tab.

Remove All Checks

Clears any checks for any parameters that have been selected.

Open All Tree

Opens all trees.

Close All Tree

Closes all tree branches for all parameter tabs.

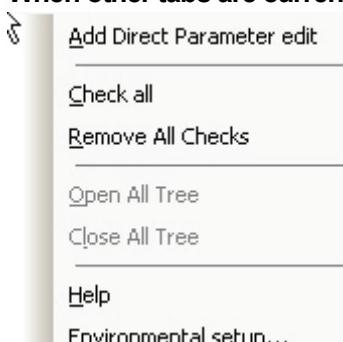
Help

Displays information on parameter settings from the drive instruction manual.

Environmental setup

Displays the Environment Setting window.

When other tabs are currently active:



Adding to the Direct Parameter Edit Window

Adds the parameters selected from the parameter list to the Direct Parameter Edit window. For instructions on the Direct Parameter Edit function, see 4.1.2.

Check All

Select all parameters, including those not displayed in the active tab.

Remove All Checks

Deselects all parameters that were selected.

Environmental setup

Displays the Environment Settings window.

Pop-up menu appearing from the column head in the Parameter List

Right-clicking on the column head in the Parameter List will display the following pop-up menu:

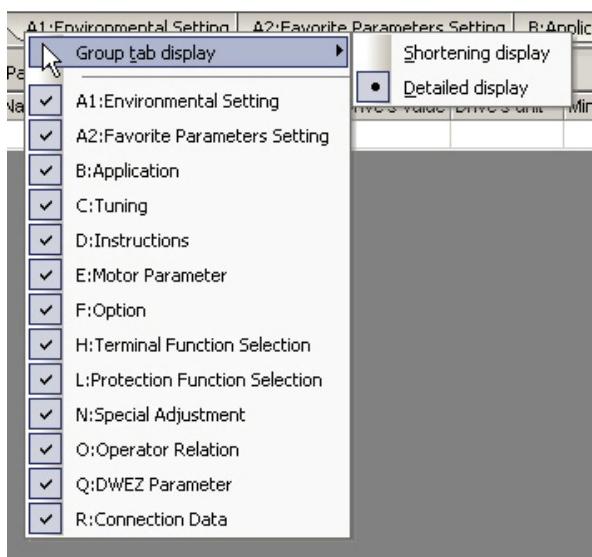


Columns

Columns can be displayed or hidden. Columns “Selection”, “No.”, and “Working Value” can not be moved.

Pop-Up Menu in an Active Tab

Right-clicking on a tab window will display the following pop-up menu:



Shortening display

Displays only the parameter group names.

Detailed display

Displays the details for each parameter group.

Group tab display

Switches between displaying and not displaying tabs.

The tabs for “All Parameters” and “Modified Parameters” cannot be switched.

Move Column

Move columns by dragging and dropping. The “Select” column cannot be moved.

Parameter Edit #01

L:Protection Function Selection

Select	No.	Name	Working value	Units	Driv...	Drive...	Min	Max	Default
<input type="checkbox"/>	L1-01	Motor protection sel...	1 : General purpose motor pr...	-	1	-	0	4	1
<input type="checkbox"/>	L1-02	Motor protection tim...	1.0	min	1.0	min	0.1	5.0	1.0
<input type="checkbox"/>	L1-03	MOL thermistor input	3 : Operation continued	-	3	-	0	3	3
<input type="checkbox"/>	L1-04	MOL filter time	1 : Coast to stop	-	1	-	0	2	1
<input type="checkbox"/>	L1-05	MOL reserved 1	0.20	sec	0.20	sec	0.00	10.00	0.20
<input type="checkbox"/>	L1-13	Electronic thermal c...	1 : Continue Electronic therma	-	1	-	0	1	1
<input type="checkbox"/>	L2-01	Momentary power l...	0 : Disabled	-	0	-	0	2	0
<input type="checkbox"/>	L2-02	Momentary power l...	0.1	sec	0.1	sec	0.0	25.5	0.1
<input type="checkbox"/>	L2-03	Min. baseblock time	0.2	sec	0.2	sec	0.1	5.0	0.2
<input type="checkbox"/>	L2-04	Voltage recovery ti...	0.3	sec	0.3	sec	0.0	5.0	0.3

C:Tuning D:Instructions E:Motor Parameter F:Option H:Terminal Function Selection L:Protection Function Selection



Parameter Edit #01

L:Protection Function Selection

Select	No.	Working value	Name	Units	Driv...	Drive...	Min	Max	Default
<input type="checkbox"/>	L1-01	1 : General purpose motor pr...	Motor protection sel...	-	1	-	0	4	1
<input type="checkbox"/>	L1-02	1.0	Motor protection tim...	min	1.0	min	0.1	5.0	1.0
<input type="checkbox"/>	L1-03	3 : Operation continued	MOL thermistor input	-	3	-	0	3	3
<input type="checkbox"/>	L1-04	1 : Coast to stop	MOL filter time	-	1	-	0	2	1
<input type="checkbox"/>	L1-05	0.20	MOL reserved 1	sec	0.20	sec	0.00	10.00	0.20
<input type="checkbox"/>	L1-13	1 : Continue Electronic therma	Electronic thermal c...	-	1	-	0	1	1
<input type="checkbox"/>	L2-01	0 : Disabled	Momentary power l...	-	0	-	0	2	0
<input type="checkbox"/>	L2-02	0.1	Momentary power l...	sec	0.1	sec	0.0	25.5	0.1
<input type="checkbox"/>	L2-03	0.2	Min. baseblock time	sec	0.2	sec	0.1	5.0	0.2
<input type="checkbox"/>	L2-04	0.3	Voltage recovery ti...	sec	0.3	sec	0.0	5.0	0.3

C:Tuning D:Instructions E:Motor Parameter F:Option H:Terminal Function Selection L:Protection Function Selection

Edit Parameter Settings

The Parameter Edit window lets you view and edit parameter settings. Setting changes can be made in the column marked, "Current Setting Value." The process for editing parameters will vary depending on the parameter that has been selected.

NOTE: Gray text indicates that the parameter cannot be edited. This includes parameters that cannot be changed during run. Such parameters can be edited after the drive has come to a complete stop.

When editing parameter settings, the color of the text and the background color will change.

Select	No.	Working value	Name	Units	Drive's value	Drive's...	Min	Max	D...
<input type="checkbox"/>	b1-02	0 : Digital operator	Operation method s...	-	0	-	0	3	1
<input type="checkbox"/>	b1-03	0 : Deceleration to stop	Stopping method	-	0	-	0	9	0
<input checked="" type="checkbox"/>	b1-04	1 : Reverse Enabled	Reverse operation	-	0	-	0	1	0
<input checked="" type="checkbox"/>	b1-07	0 : Cycle External Run - If the...	Local/remote run s...	-	0	-	0	1	0
<input checked="" type="checkbox"/>	b1-08	0 : Cannot operate	Run command at pr...	-	0	-	0	2	0
<input type="checkbox"/>	b1-14	0 : Normal	Phase Turn Selection	-	0	-	0	1	0
<input type="checkbox"/>	b1-15	0 : Digital Operator	Reference Selectio...	-	0	-	0	4	0
<input type="checkbox"/>	b1-16	0 : Digital Operator	Operation method s...	-	0	-	0	3	0
<input type="checkbox"/>	b1-17	0 : Prohibition	Operation permissi...	-	0	-	0	1	0
<input checked="" type="checkbox"/>	b2-01	11.0	DC injection start fr...	Hz	0.0	Hz	0.0	10.0	0.5
<input checked="" type="checkbox"/>	b2-02	51	DC injection current	%	0	%	0	75	50

	Name	Description
①	Parameter display during Edit	Parameter currently being edited will appear in green. Once that parameter has been written to the drive, the edit status will return to normal and the parameter will appear in light yellow shading. Parameters that have been changed from their original default values will appear in blue text.
②	Parameter display outside range	If a parameter has been set outside the allowable setting range, the text will appear in red. Certain parameters will display "Reserved" when a selection that cannot be set has been entered.
③	Parameter default values differ	Settings that have been changed from their original default values will be displayed in blue text.

Editing a numeric value

Single-click or double-click on the value you want to change, and then enter the new setting.

Select	No.	Working value	Name	Unit	Drive's value	Drive'...	Min	Max	Default
<input type="checkbox"/>	b1-16	0 : Digital Operator	Operation method s...	-	0	-	0	3	0
<input type="checkbox"/>	b1-17	0 : Prohibition	Operation permissi...	-	0	-	0	1	0
<input type="checkbox"/>	b2-01	0.0	DC injection start fr...	Hz	0.0	Hz	0.0	10.0	0.5
<input checked="" type="checkbox"/>	b2-02	50	DC injection current	%	50	%	0	75	50
<input type="checkbox"/>	b2-03	0.00	DC injection time at ...	sec	0.00	sec	0.00	10.00	0.00
<input type="checkbox"/>	b2-04	0.00	DC injection time at ...	sec	0.00	sec	0.00	10.00	0.50
<input type="checkbox"/>	b2-15	50	DC injection current2	%	50	%	0	100	50
<input type="checkbox"/>	b3-01	0 : Disabled	Speed search at st...	-	0	-	0	1	0

Editing the value selected

Select the item from the drop-down menu, or enter the new value directly into the line provided.

Select	No.	Working value	Name	Unit	Drive's value	Drive'...	Min	Max	Default
A1:Environmental Setting									
<input type="checkbox"/>	A1-01	Access Level Access	Access level	-	2	-	0	9999	2
<input type="checkbox"/>	A1-02	0 : Monitoring only	Access level	-	0	-	0	7	0
<input type="checkbox"/>	A1-03	1 : Used to select user constant	Access level	-	0	-	0	9990	0
<input type="checkbox"/>	A1-04	2 : Advanced Level Access	Access level	-	0	-	0	9999	0
<input type="checkbox"/>	A1-05	0	Select password	-	0	-	0	9999	0
<input type="checkbox"/>	A1-06	0 : General	Select application	-	0	-	0	15	0
<input type="checkbox"/>	A1-07	0 : Disabled	DWEZ Function Sel...	-	0	-	0	2	0

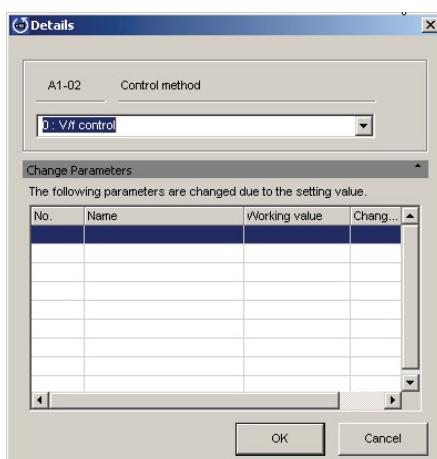
Editing the Control Mode

Below is an example of editing the control mode or parameters that depend on the control mode. The

Edit window will appear by double-clicking on a parameter row, or by selecting “Control Method

Selection” from the parameter list, then clicking the  icon.

Select	No.	Working value	Name	Unit	Drive's value	Drive'...	Min	Max	Default
A1:Environmental Setting									
<input type="checkbox"/>	A1-01	2 : Advanced Level A...	Access level	-	2	-	0	9999	2
<input checked="" type="checkbox"/>	A1-02	0 : V/f control	Control method	-	0	-	0	9999	0
<input type="checkbox"/>	A1-03	0 : No initializing	Init parameters	-	0	-	0	9999	0
<input type="checkbox"/>	A1-04	0	Enter password	-	0	-	0	9999	0
<input type="checkbox"/>	A1-05	0	Select password	-	0	-	0	9999	0
<input type="checkbox"/>	A1-06	0 : General	Select application	-	0	-	0	9999	0



Either select the setting value from the List Box, or enter the value directly. Any parameters that are affected when the control mode is changed will be displayed in this list.

Click “OK” to accept all of these related changes, or click “Cancel” if you decide you do not want to make the changes listed in the window. DriveWizard Plus will return to the Parameter Edit Screen.

Editing the Access Level of the Selected Parameter

Select “Access Level” from the list, then click on the desired setting in the drop-down list or enter the value manually.

Select	No.	Working value	Name	Un...	D...
<input type="checkbox"/>	A1:Environmental Setting				
<input checked="" type="checkbox"/>	A1-01	2 : Advanced Lev...	Access level	-	2
<input type="checkbox"/>	A1-02	0 : V/f control	Control method	-	0
<input type="checkbox"/>	A1-03	0 : No initializing	Init parameters	-	0
<input type="checkbox"/>	A1-04	0	Enter password	-	0
<input type="checkbox"/>	A1-05	0	Select password	-	0
<input type="checkbox"/>	A1-06	0 : General	Select application	-	0

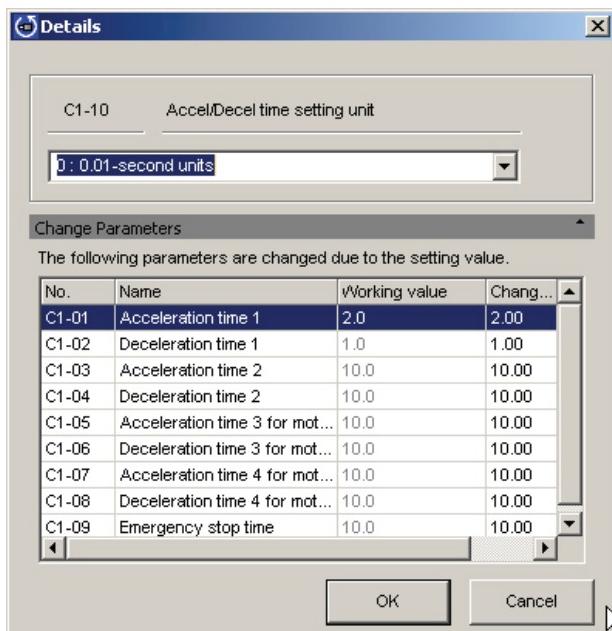
The value will be displayed, provided the value is within the possible setting range, and all parameters with that access level will appear in the parameter list.

Editing parameters that affect other parameter settings

Changing certain parameters will cause other parameters to change accordingly.

Select	No.	Working value	Name	Unit	Drive'...	Drive'...	N
<input type="checkbox"/>	C1-07	10.0	Acceleration time ...	sec	10.0	sec	0
<input type="checkbox"/>	C1-08	10.0	Deceleration time ...	sec	10.0	sec	0
<input type="checkbox"/>	C1-09	10.0	Emergency stop ti...	sec	10.0	sec	0
<input checked="" type="checkbox"/>	C1-10	1 : 0.1-second units	Accel/Decel time ...	-	1	-	0
<input type="checkbox"/>	C1-11	0.0	Accel/Decel swit...	Hz	0.0	Hz	0
<input type="checkbox"/>	C2-01	0.00	S-curve accelera...	Sec	0.00	sec	0

Select the parameter you want to edit, then click  or double-click on the parameter. The Parameter Edit window will appear.



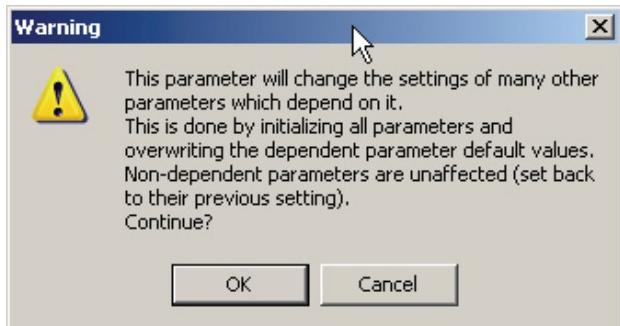
Either select the setting value from the List Box, or enter the value directly. Any parameters that are affected when the change is made will be displayed in this list.

Click “OK” to accept all of these related changes, or click “Cancel” if you decide you do not want to make the changes listed in the window. DriveWizard Plus will return to the Parameter Edit Screen.

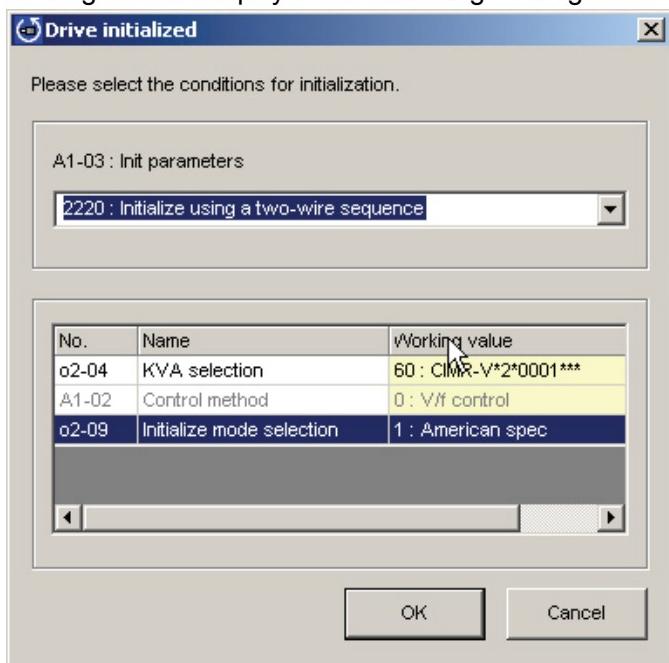
Changing the Settings for the Drive kVA Selection or Initialization

Changing the Drive kVA setting or entering a value into the Initialization parameter will initialize the drive. Most parameters in the drive will be reset to the default values for the kVA setting that was selected, or according to the type of initialization that was entered.

Attempting to change any settings to the Drive KVA setting or initialization parameter will generate the following message. The same will happen by clicking .



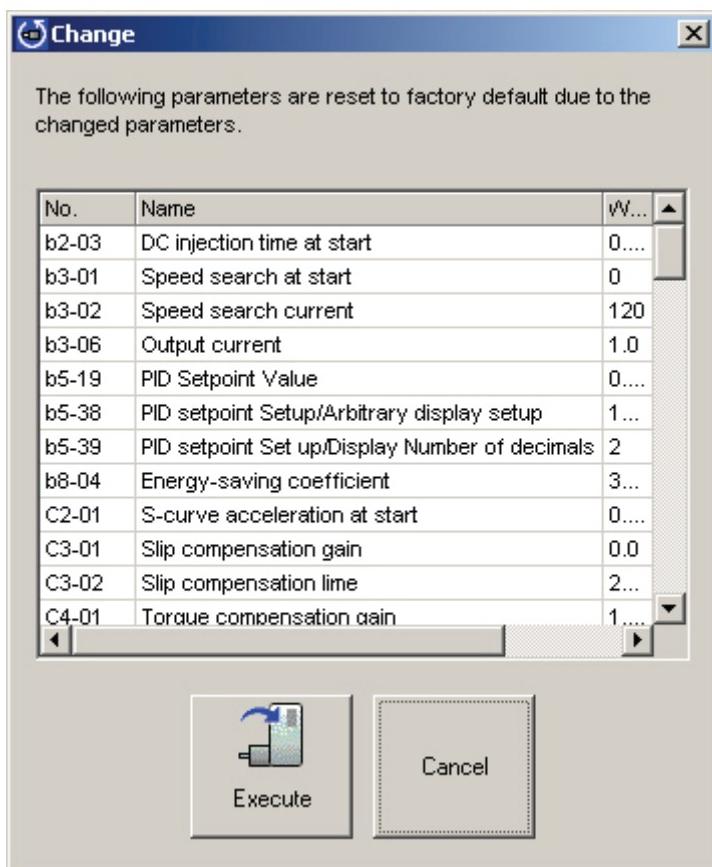
Clicking "OK" will display with the following message:



Either select the type of initialization from the drop-down menu or enter the value manually.

Next, either select "Current Setting Value" from the drop-down menu that appears below, or enter the value manually. Clicking "OK" will generate the following window:

NOTE: The lower drop-down list is enabled only when editing the drive kVA setting. The lower drop-down list is enabled only when selecting the type of initialization to perform on the drive settings.



Click "Execute" to start the initialization process.

After the drive has been initialized, the parameter settings that are affected by the type of initialization selected will be automatically set to their new default values.

All changes that have been written to the drive appear in the "Working values" column, and the view will return to the Parameter Edit screen.

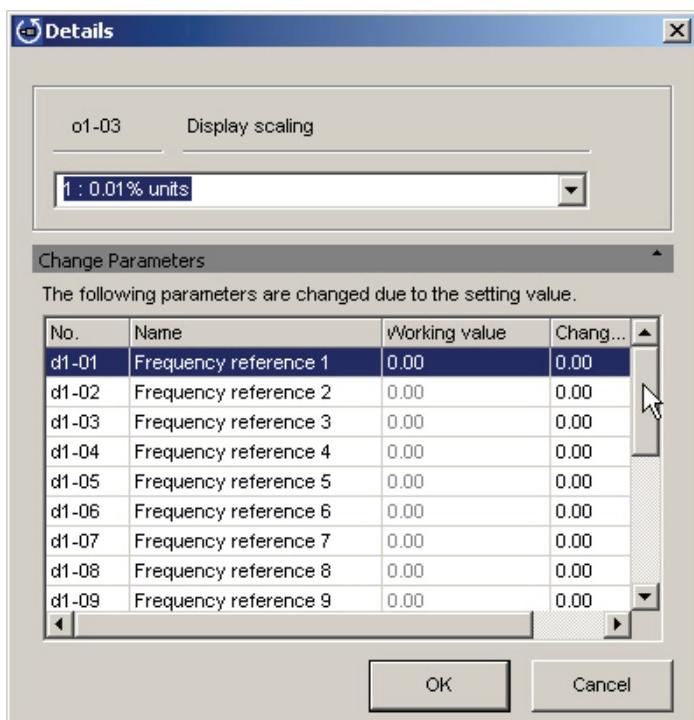
Display Digits for Setting Units

Changing the units displayed or the number of digits for a parameter setting will automatically recalculate parameter values.

Setting Units

Select "Frequency Reference Setting/Display Units" from the parameter list and click or double-click on the corresponding row.

Some drives do not show "Display scaling".



Either select the desired setting from the drop-down menu or enter the setting manually.

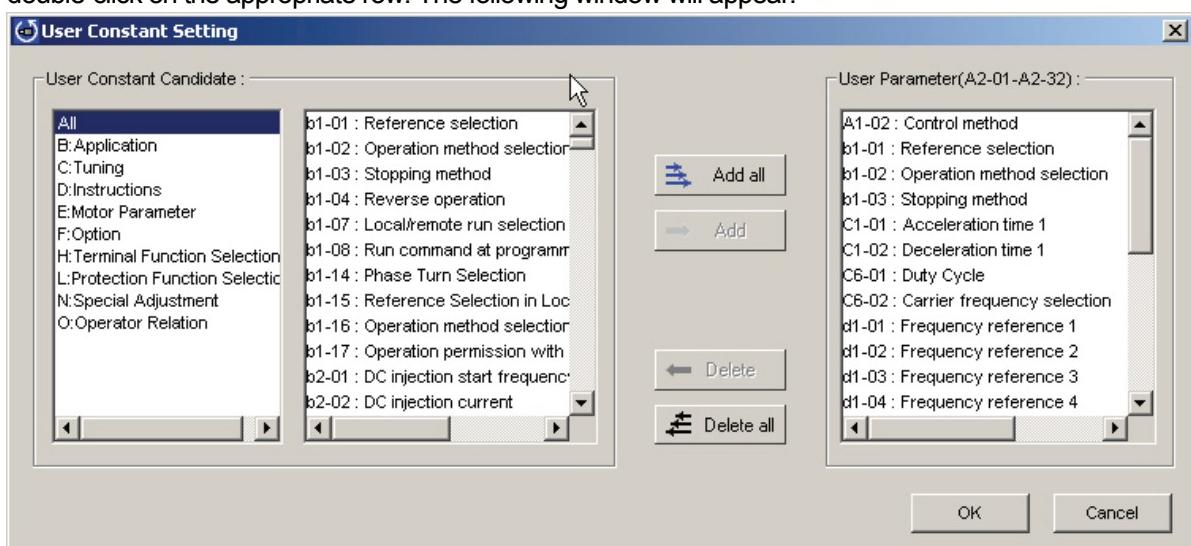
Once the value has been entered, a list of parameters that are affected by the change in units for the frequency reference will appear in the list shown above.

Click "OK" to accept these changes, or click "Cancel" if you decide you do not want to make the changes listed in the window. DriveWizard Plus will return to the Parameter Edit Screen.

User Parameter Setting

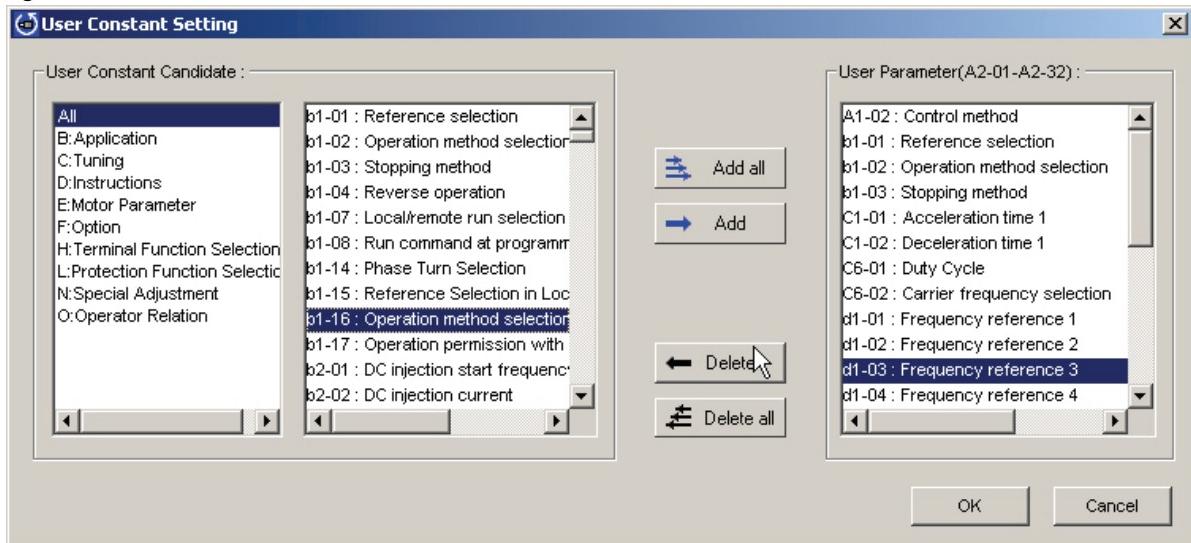
Setting parameters to the User Access Level creates a select list of parameters that can be quickly view and edited.

Select a parameter from "A2: Favorite Parameters Setting" from the parameter list and click ..., or double-click on the appropriate row. The following window will appear:



Select the parameter to add to the User Parameter list and click "Add".

Parameters that have been set to the User Parameter List will appear in the corresponding box on the right.



Click "OK" to accept these changes, or click "Cancel" if you decide you do not want to make the changes listed in the window. DriveWizard Plus will return to the Parameter Edit Screen.



Clicking "OK" will save the changes that were made and DriveWizard Plus will return to the Parameter Edit Screen.

Saving parameter settings to be used as a User Initialization

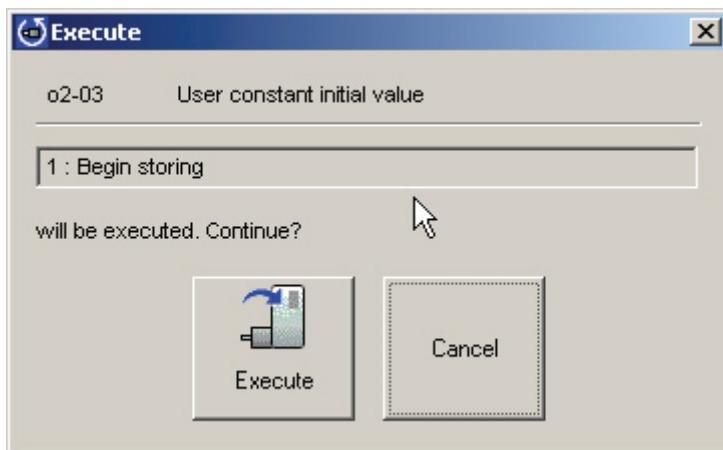
Select parameter o2-03 and set the Working value so that the current parameter settings become the default values when a User Initialization is performed.

Select	No.	Working value	Name	Un...	Drive'...	Drive'...	Min
<input type="checkbox"/>	o2-01	1 : Enabled	LOCAL/REMOTE key en...	-	1	-	0
<input type="checkbox"/>	o2-02	1 : Always enabled	Operation STOP key	-	1	-	0
<input checked="" type="checkbox"/>	o2-03	0 : Stores/not set	User constant initial value	-	0	-	0
<input type="checkbox"/>	o2-04	0 : Stores/not set	KVA selection	-	0060	-	0000
<input type="checkbox"/>	o2-05	1 : Begin storing	Frequency Reference S...	-	0	-	0
<input type="checkbox"/>	o2-06	2 : All clear	Operator detection	-	0	-	0
<input type="checkbox"/>	o2-07	0 : Forward run	Bidirection when the in...	-	0	-	0
<input type="checkbox"/>	o2-09	1 : American spec	Initialize mode selection	-	1	-	0
<input type="checkbox"/>	o4-01	3	Cumulative operation tim...	H	3	H	0
<input type="checkbox"/>	o4-02	0 : Cumulative time when the In...	Cumulative operation tim...	-	0	-	0
<input type="checkbox"/>	o4-03	0	Fan operation time setting	H	0	H	0
<input type="checkbox"/>	o4-05	0	Capacitor maintenance ...	%	0	%	0
<input type="checkbox"/>	o4-07	0	Rush-in prevention relay...	%	0	%	0

NOTE: Any parameters that have been edited will be returned to their previous values if a function is executed and those changes were not first saved.

*These parameters cannot be edited when online (i.e., they can only be viewed and not changed).

*Initialize parameter values first.



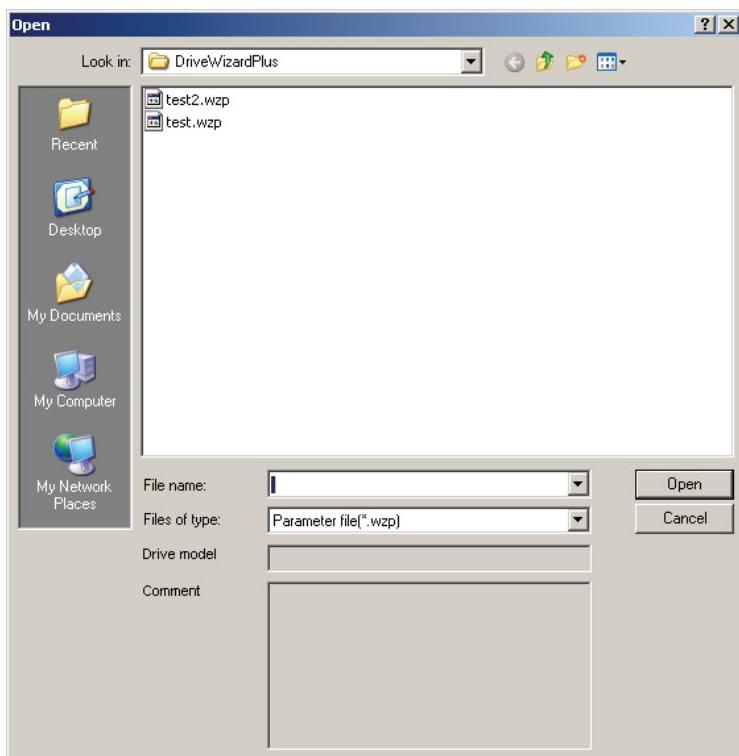
Next either select “1: Begin storing” from the drop-down menu or enter the value manually.

Clicking “Execute” will save the current parameter settings to be used as a User Initialization. Click “Cancel” if you decide not to save the current parameter settings. When finished, DriveWizard Plus will return to the Parameter Edit window.

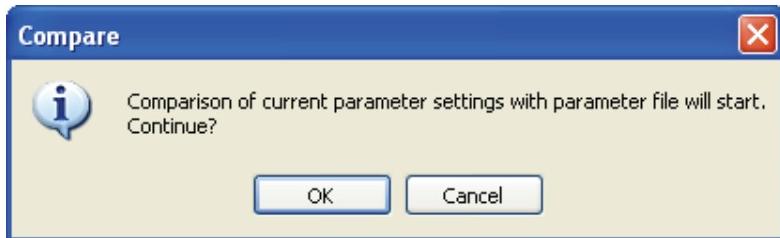
Comparing Files

To compare all parameter settings (both those displayed in the current window as well as those that are not displayed) from one file with all parameter settings in another file, follow the directions below.

Click on the “File Compare” button located on the toolbar. The following screen will appear:



Select the file you wish to compare and click “Open”. The following message will appear:



If you do not wish to compare the file, click “Cancel” and the screen will return to the Parameter Edit window.

Click “OK” to compare the files. When finished, the following screen will appear:

When all parameters agree

A message appears, indicating that parameters match the file.



When parameters do not agree

The Status bar will read, “Parameters settings differ.” A list of the parameter setting differences will appear as shown below:

Comparison results with file					
No.	Name	Working value	Units	File's value	File's unit
d1-01	Frequency reference 1	0.00	Hz	0.10	Hz

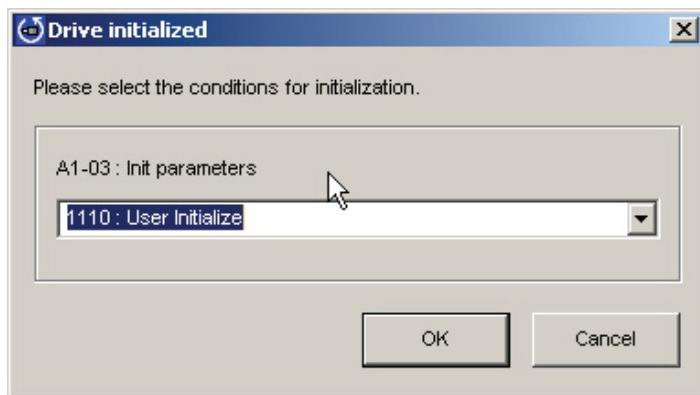
To save the file compare results, right-click on the Results window and select “Save” from the pop-up menu.

Initializing the Drive

Returns all settings to their original default values. To initialize the drive, follow the instructions below:

- 1) To initialize the drive, select “Drive initialized” from the Edit menu or the toolbar, or double-click A1-03, Init Parameters from the Parameter Edit window.

The following window will appear:



If you decide that you do not want to initialize the drive at this point, click “Cancel” and DriveWizard Plus will return to the Parameter Edit window.

- 2) Select the type of initialization to perform using the drop-down menu. Normally, initializing the drive does not require information such as the drive capacity or control mode. If there are any changes to drive capacity or control mode, those changes should be entered directly into the appropriate parameters.
- 3) Click “OK” and the following window will appear:

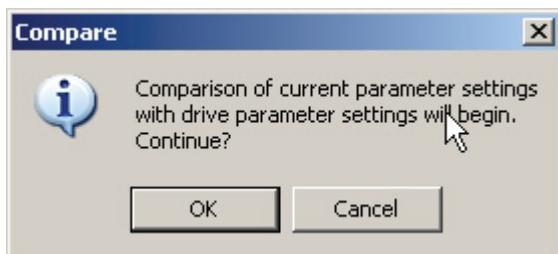


- 4) Click “Execute,” and the DriveWizard Plus will begin to initialize the drive.

Comparing Drives

To compare all parameters in a drive with the settings in a Project (including parameters that may not be displayed on the screen), follow the procedure below:

- 1) Go to the Edit menu or the toolbar and select “Drive Compare”. The following screen will appear:



If you decide you do not to compare parameter settings at this point, click “Cancel” and DriveWizard Plus will return to the Parameter Edit window.

- 2) Click “OK” to compare parameter settings in the drive.

When All Parameters Agree

The Status Bar will display the message “Parameters are matched to the drive.”



When Parameters Do Not Agree

The Status bar will read, “Parameter values in the drive differ.” A list of parameters that have different setting values will appear.

Comparison results with drive						
No.	Name	Working value	Units	Drive's value	Drive's unit	
04-01	Cumulative operation time setting	3	H	4	H	

To save the results after comparing parameters, right-click on the Results window and select “Save” from the pop-up menu.

Reading parameter settings from the drive

Reads the selected parameters from the drive and writes them to the Project.

From the Edit menu or the toolbar, click “Read selected parameters”, “Group Read”, or “Read All Parameters”.

Read Selected Parameters

DriveWizard Plus will read the parameters selected in the Parameter Edit window.

Read Parameter Group

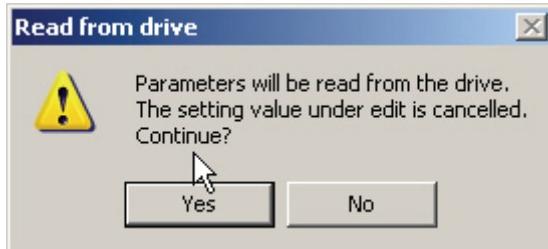
DriveWizard Plus will read the selected group of parameters.

Read All Parameters

Reads all parameters, including those that are not displayed.

When parameters are currently being edited

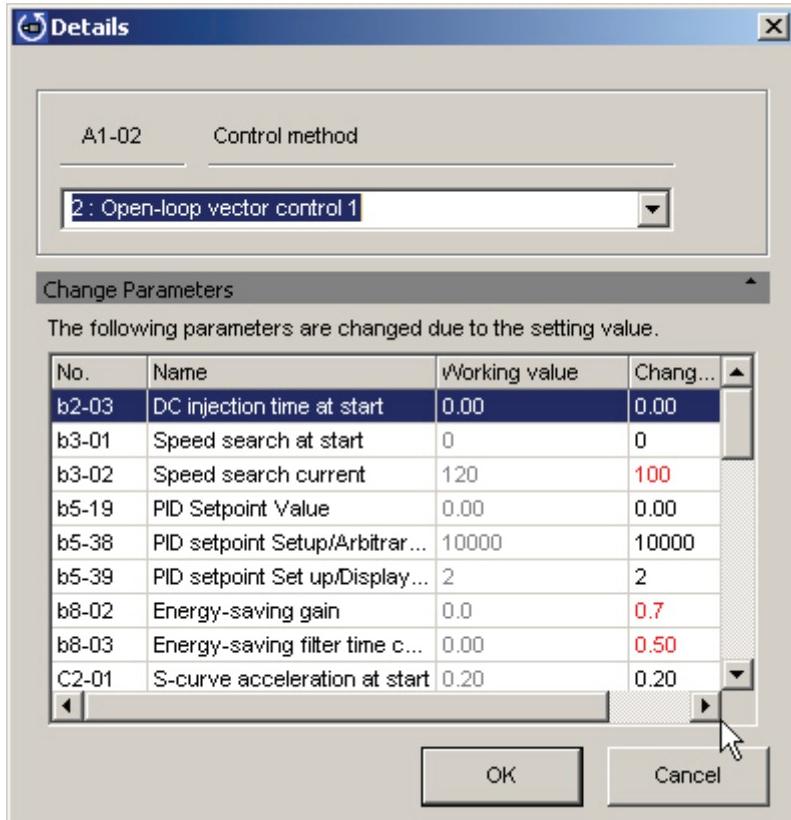
If parameter settings are currently being edited, the following warning message will appear:



To erase the changes to parameters that are currently being edited and then read parameters in the drive, click “Yes”. If you decide you do not want to erase the changes currently being made, click “No” and DriveWizard Plus will return to the Parameter Edit window.

When parameters settings are affected by a change to another parameter group

The following window will appear:



To read the entire list of parameters including related parameters, click "OK".

If you decide not to read the parameters in the list, click Cancel and DriveWizard Plus will return to the Parameter Edit window.

Write to Drive

Saves the selected parameters to the drive.

From the Edit menu or the toolbar, and click "Write selected parameters", "Write Group", or "Write all parameters".

Write Selected Parameters

Writes the parameters selected in the Parameter Edit window. A shortcut key to write parameter settings is available by pressing Ctrl + W.

Write Group

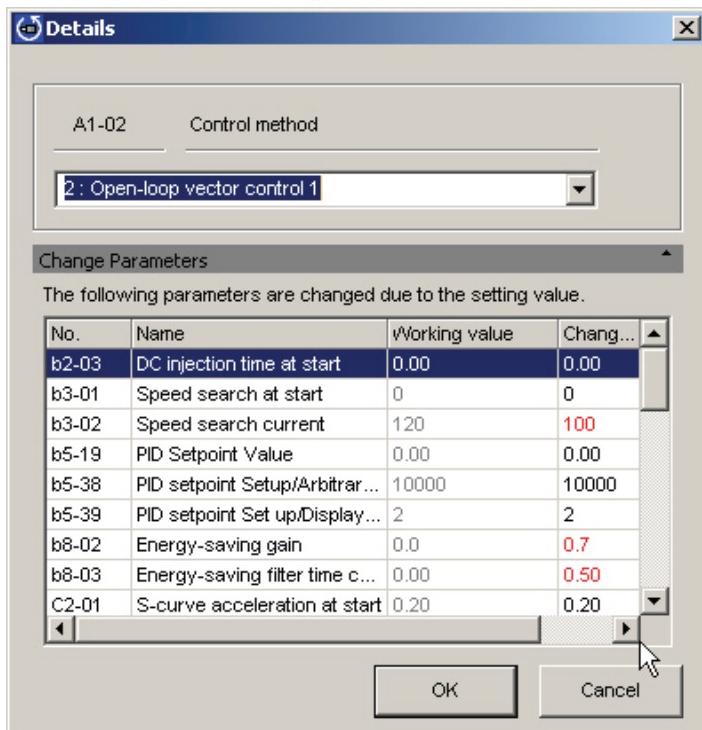
Writes all parameters in the group shown in the Parameter Edit window.

Write All Parameters

Write all parameters (including those that are not displayed).

When parameters selected in a group affect the settings of parameters in other groups

The following window will appear:

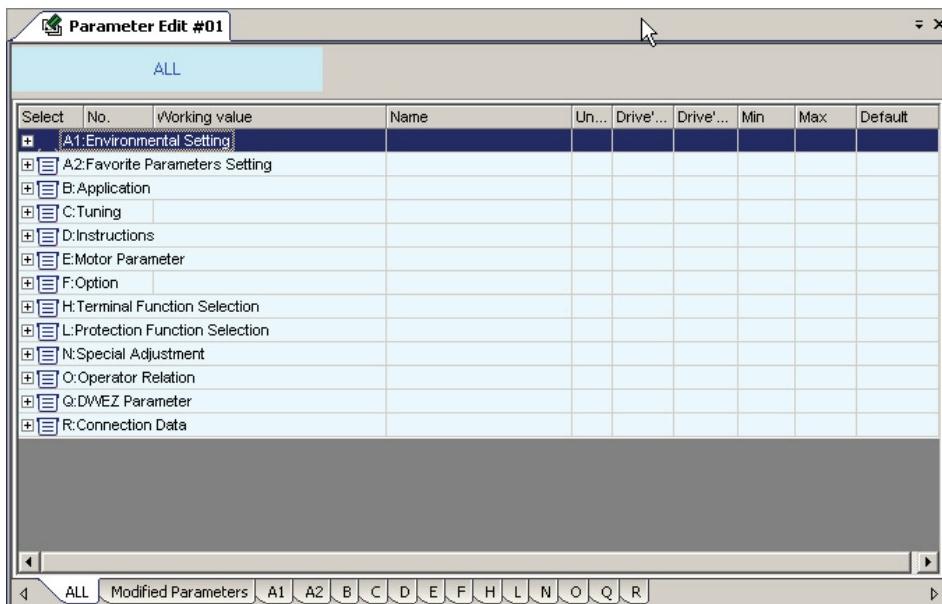


To write all parameters, including related parameters listed in the window, click "OK".

If you decide not to write the parameter values shown, click "Cancel" and DriveWizard Plus will return to the Parameter Edit window.

4.2.1.2 Parameter Edit Screen Working Online

Selecting "Parameter Edit" from the function tree in DriveWizard Plus will call up the Parameter Edit window.



Parameter List Pop-Up Menu

Right-clicking on the parameter list will call up a pop-up menu. Possible menu items will vary depending on which tabs are currently active.

When all parameter tabs are active



Check all

Selects all parameters in the active tab, including those that aren't displayed.

Remove All Checks

Clears all checks, including those that aren't displayed.

Open All Tree

Opens all trees in the parameter tab.

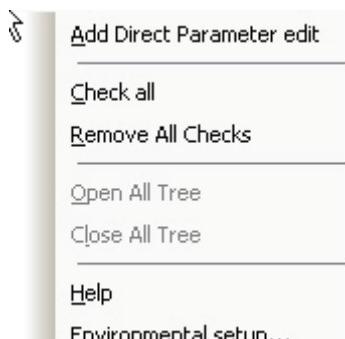
Close All Tree

Closes all trees in the parameter tab.

Environmental setup

Displays the Environment setup window.

When other tabs are active



Check all

Selects all parameters in the active tab, including those that aren't displayed.

Remove All Checks

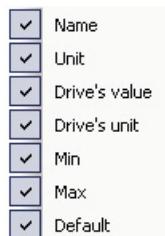
Clears all checks, including those that aren't displayed.

Environmental setup

Displays the Environment setup window.

Pop-up menu displayed in the column head

The following pop-up menu is generated by clicking on a column head in the parameter list.



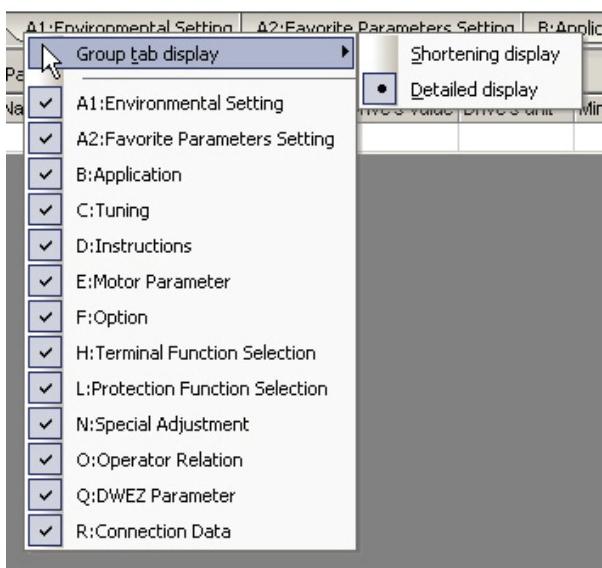
Column Heading

Column headings can be displayed or hidden from view.

It is not possible, however, to hide "Select", "No.", or "Working value".

Tab pop-up menu

The following pop-up menu will appear by right-clicking on the tab:



Shortening display

Displays only the parameter group names.

Detail display

Displays the details for each parameter group.

Group tab display

Switches between displaying and not displaying tabs.

NOTE: The tabs for "All Parameters" and "Modified Parameters" cannot be switched.

Edit Parameter Settings

The Edit window lets you view and edit parameter settings. Setting changes can be made in the column marked, "Working value." The process for editing parameters will vary depending on the parameter that has been selected.

NOTE: Gray text indicates that the parameter cannot be edited. This includes parameters that cannot be changed during run. Such parameters can be edited after the drive has come to a stop.

When editing parameter settings, the color of the text and the background color will change.

Select	No.	Working value	Name	Units	Drive's value	Drive'...	Min	Max	D...
<input type="checkbox"/>	b1-02	0 : Digital operator	Operation method s...	-	0	-	0	3	1
<input type="checkbox"/>	b1-03	0 : Deceleration to stop	Stopping method	-	0	-	0	9	0
<input checked="" type="checkbox"/>	b1-04	1 : Reverse Enabled	Reverse operation	-	0	-	0	1	0
<input checked="" type="checkbox"/>	b1-07	0 : Cycle External Run - If the...	Local/remote run s...	-	0	-	0	1	0
<input checked="" type="checkbox"/>	b1-08	0 : Cannot operate	Run command at pr...	-	0	-	0	2	0
<input type="checkbox"/>	b1-14	0 : Normal	Phase Turn Selection	-	0	-	0	1	0
<input type="checkbox"/>	b1-15	0 : Digital Operator	Reference Selectio...	-	0	-	0	4	0
<input type="checkbox"/>	b1-16	0 : Digital Operator	Operation method s...	-	0	-	0	3	0
<input type="checkbox"/>	b1-17	0 : Prohibition	Operation permissi...	-	0	-	0	1	0
<input checked="" type="checkbox"/>	b2-01	1.0	DC injection start fr...	Hz	0.0	Hz	0.0	10.0	0.5
<input checked="" type="checkbox"/>	b2-02	51	DC injection current	%	0	%	0	75	50

No	Name	Description
①	Parameter display during Edit	Parameters currently being edited will appear in green. Once a parameter has been written to the drive, the edit status will return to normal and the parameter will appear in light yellow shading. Parameters that have been changed from their original default values will appear in blue text.
②	Parameter display outside range	If a parameter has been set outside the allowable setting range, the text will appear in red. Certain parameters will display "Reserved" when a selection that cannot be set has been entered.
③	Parameter default values differ	Settings that have been changed from their original default values will be displayed in blue text.

Editing a numeric value

Click on the value you want to change, and then enter the new setting. Double-clicking on the value also works.

Select	No.	Working value	Name	Unit	Drive's value	Drive's unit	Min	Max	Default
<input type="checkbox"/>	b1-16	0 : Digital Operator	Operation method selection	-	0	-	0	3	0
<input type="checkbox"/>	b1-17	0 : Prohibition	Operation permission	-	0	-	0	1	0
<input type="checkbox"/>	b2-01	0.0	DC injection start frequency	Hz	0.0	Hz	0.0	10.0	0.5
<input checked="" type="checkbox"/>	b2-02	50	DC injection current	%	50	%	0	75	50
<input type="checkbox"/>	b2-03	0.00	DC injection time at start	sec	0.00	sec	0.00	10.00	0.00
<input type="checkbox"/>	b2-04	0.00	DC injection time at stop	sec	0.00	sec	0.00	10.00	0.50
<input type="checkbox"/>	b2-15	50	DC injection current%2	%	50	%	0	100	50
<input type="checkbox"/>	b3-01	0 : Disabled	Speed search at start	-	0	-	0	1	0

Editing the value selected

Either select the item from the drop-down menu, or enter the new value directly into the line provided.

Select	No.	Working value	Name	Unit	Drive's value	Drive's unit	Min	Max	Default
A1:Environmental Setting									
<input checked="" type="checkbox"/>	A1-01	ced Level Access	Access level	-	2	-	0	9999	2
<input type="checkbox"/>	A1-02	0 : Monitoring only	bd	-	0	-	0	7	0
<input type="checkbox"/>	A1-03	1 : Used to select user constant	s	-	0	-	0	9990	0
<input type="checkbox"/>	A1-04	2 : Advanced Level Access	ord	-	0	-	0	9999	0
<input type="checkbox"/>	A1-05	0	Select password	-	0	-	0	9999	0
<input type="checkbox"/>	A1-06	0 : General	Select application	-	0	-	0	15	0
<input type="checkbox"/>	A1-07	0 : Disabled	DMEZ Function Sel	-	0	-	0	2	0

Editing the Control Mode

Below is an example of editing the control mode or parameters that depend on the control mode. The Edit window will appear by double-clicking on a parameter row, or by selecting “Control Method Selection” from the parameter list, then clicking the  icon.

Select	No.	vWorking value	Name	Un...	D...
<input checked="" type="checkbox"/>	A1-Environmental Setting				
<input type="checkbox"/>	A1-01	2 : Advanced Level A...	Access level	-	2
<input checked="" type="checkbox"/>	A1-02	0 : V/f control	Control method	-	0
<input type="checkbox"/>	A1-03	0 : No initializing	Init parameters	-	0
<input type="checkbox"/>	A1-04	0	Enter password	-	0
<input type="checkbox"/>	A1-05	0	Select password	-	0
<input type="checkbox"/>	A1-06	0 : General	Select application	-	0

The screenshot shows a software interface with a title bar 'Details'. In the main area, there is a parameter entry field labeled 'Control method' with the value 'V/f control'. Below this, a section titled 'Change Parameters' displays a table with four columns: 'No.', 'Name', 'Working value', and 'Change...'. The table has several rows, each representing a parameter that has been modified by the selected setting. At the bottom of the window are 'OK' and 'Cancel' buttons.

Either select the setting value from the List Box, or enter the value directly. Any parameters that are affected when the control mode is changed will be displayed in this list.

Click “OK” to accept all of these related changes, or click “Cancel” if you decide you do not want to make the changes listed in the window. DriveWizard Plus will return to the Parameter Edit Screen.

Editing the Access Level of the Selected Parameter

Select “Access Level” from the list, then click on the desired setting in the drop-down list or enter the value manually.

Select	No.	Working value	Name	Un...	D...
A1: Environmental Setting					
<input checked="" type="checkbox"/>	A1-01	2 : Advanced Lev...	Access level	-	2
<input type="checkbox"/>	A1-02	0 : V/f control	Control method	-	0
<input type="checkbox"/>	A1-03	0 : No initializing	Init parameters	-	0
<input type="checkbox"/>	A1-04	0	Enter password	-	0
<input type="checkbox"/>	A1-05	0	Select password	-	0
<input type="checkbox"/>	A1-06	0 : General	Select application	-	0

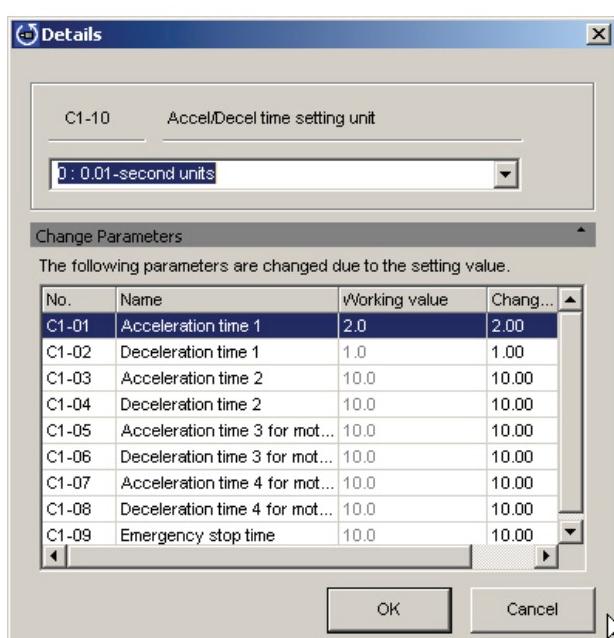
The value will be displayed, provided the value is within the possible setting range and all parameters with that access level will appear in the parameter list.

Editing parameters that affect other parameter settings

Changing certain parameters will cause other parameters to change accordingly.

Select	No.	Working value	Name	Unit	Drive'...	Drive'...	N
<input type="checkbox"/>	C1-07	10.0	Acceleration time ...	sec	10.0	sec	C
<input type="checkbox"/>	C1-08	10.0	Deceleration time ...	sec	10.0	sec	C
<input type="checkbox"/>	C1-09	10.0	Emergency stop ti...	sec	10.0	sec	C
<input checked="" type="checkbox"/>	C1-10	1 : 0.1-second units	Accel/Decel time ...	-	1	-	C
<input type="checkbox"/>	C1-11	0.0	Accel/Decel swit...	Hz	0.0	Hz	C
<input type="checkbox"/>	C2-01	0.00	S-curve accelera...	Sec	0.00	sec	C

Select the parameter you want to edit, then click or double-click on the parameter. The Parameter Edit window will appear.



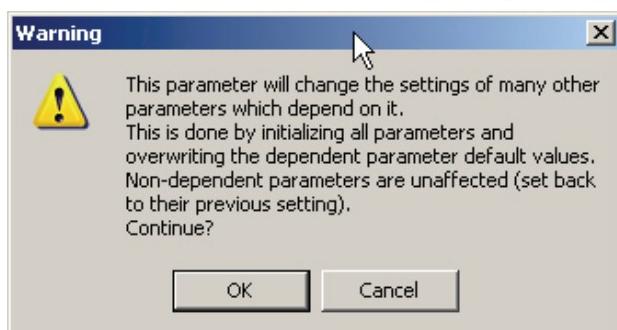
Either select the setting value from the List Box, or enter the value directly. Any parameters that are affected when the change is made will be displayed in this list.

Click "OK" to accept all of these related changes, or click "Cancel" if you decide you do not want to make the changes listed in the window. DriveWizard Plus will return to the Parameter Edit Screen.

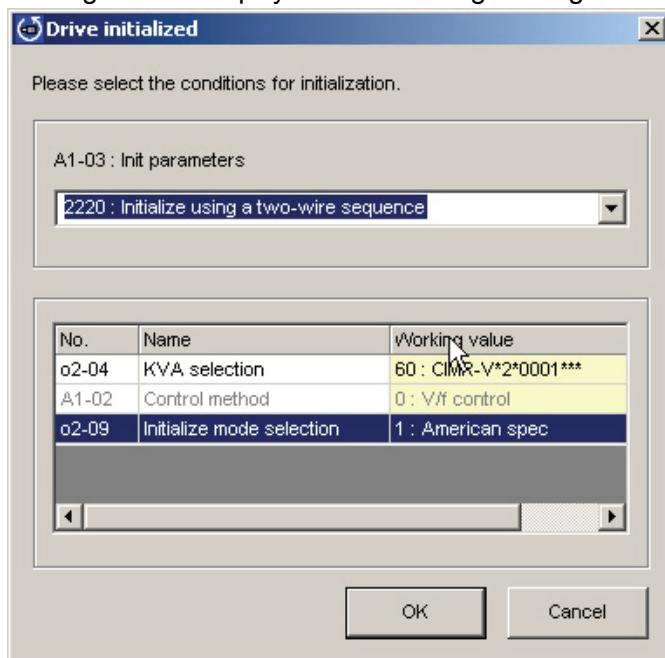
Changing the Settings for the Drive kVA Selection or Initialization

Changing the Drive kVA setting or entering a value into the Initialization parameter will initialize the drive. Most parameters in the drive will be reset to the default values for the kVA setting that was selected, or according to the type of initialization that was entered.

Attempting to change any settings to the Drive kVA setting or initialization parameter will generate the following message. The same will happen by clicking .

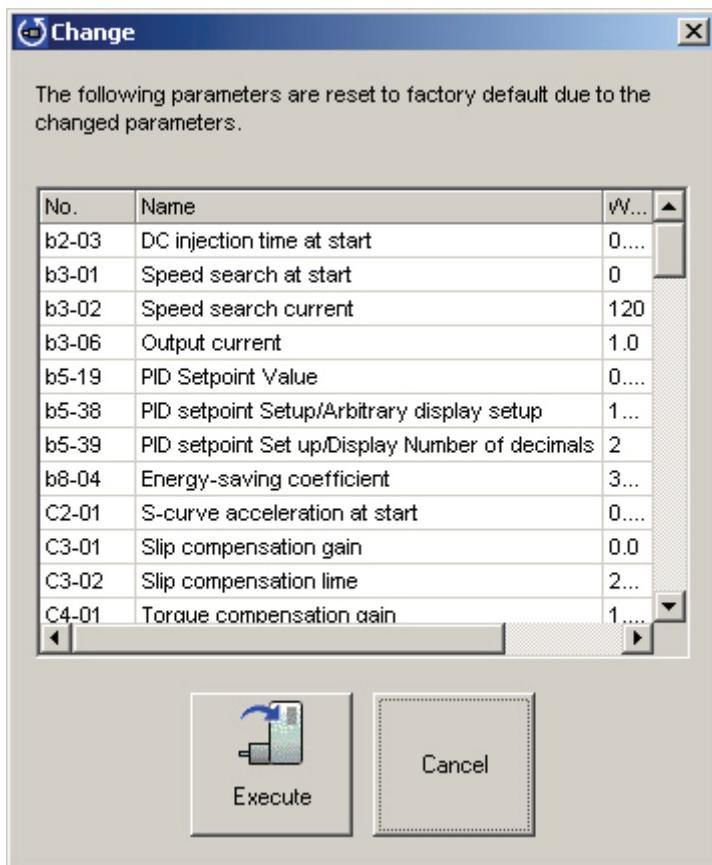


Clicking "OK" will display with the following message:



Either select the type of initialization from the drop-down menu or enter the value manually. Next, either select "Current Setting Value" from the drop-down menu that appears below, or enter the value manually.

Clicking "OK" will generate the following window:



NOTE: The lower drop-down list is enabled only when editing the drive kVA setting and when selecting the type of initialization to perform on the drive settings.

Click "Execute" to start the initialization process. After the drive has been initialized, the parameter settings that are affected by the type of initialization selected will be automatically set to their new default values. All changes that have been written to the drive appear in the "Working values" column, and the view will return to the Parameter Edit screen.

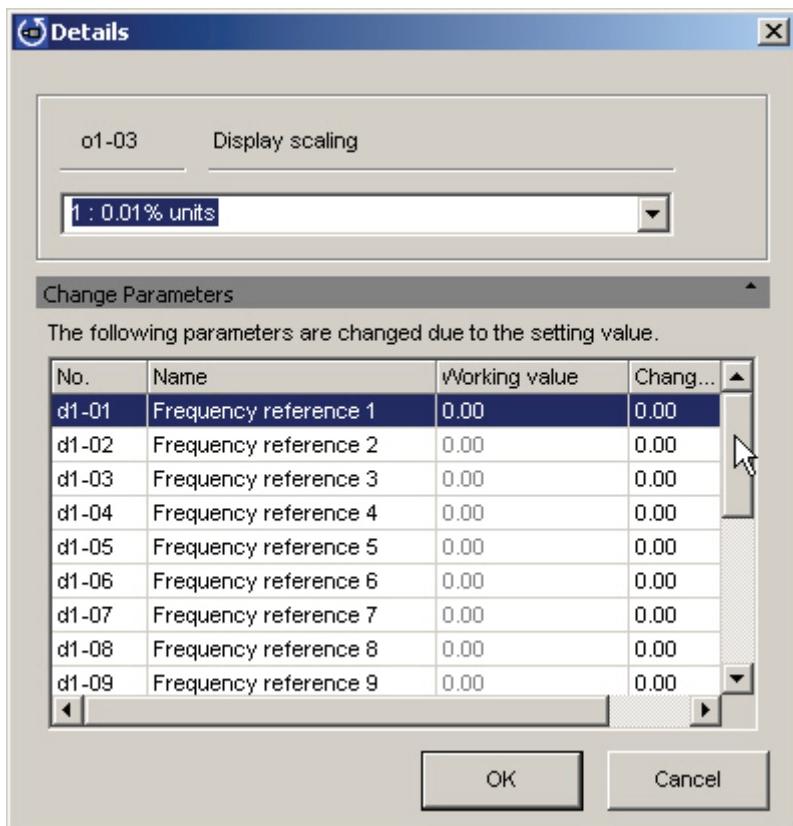
Display Digits for Setting Units

Changing the units displayed or the number of digits for a parameter setting will automatically recalculate parameter values.

Setting Units

Select "Frequency Reference Setting/Display Units" from the parameter list and click or double-click on the corresponding row.

"Display scaling" is not available in some drives.



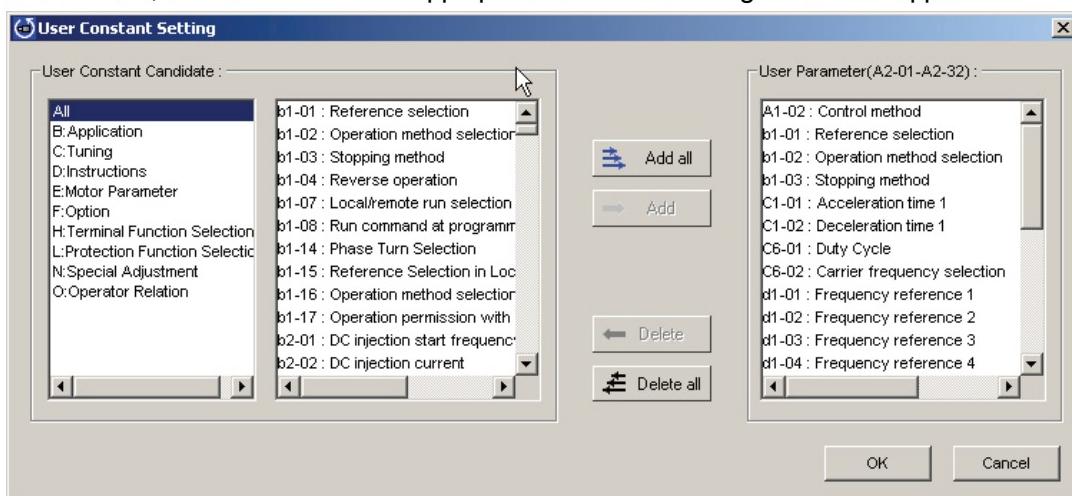
Either select the desired setting from the drop-down menu or enter the setting manually.

Once the value has been entered, a list of parameters that are affected by the change in units for the frequency reference will appear in the list shown above.

Click "OK" to accept these changes, or click "Cancel" if you decide you do not want to make the changes listed in the window. DriveWizard Plus will return to the Parameter Edit Screen.

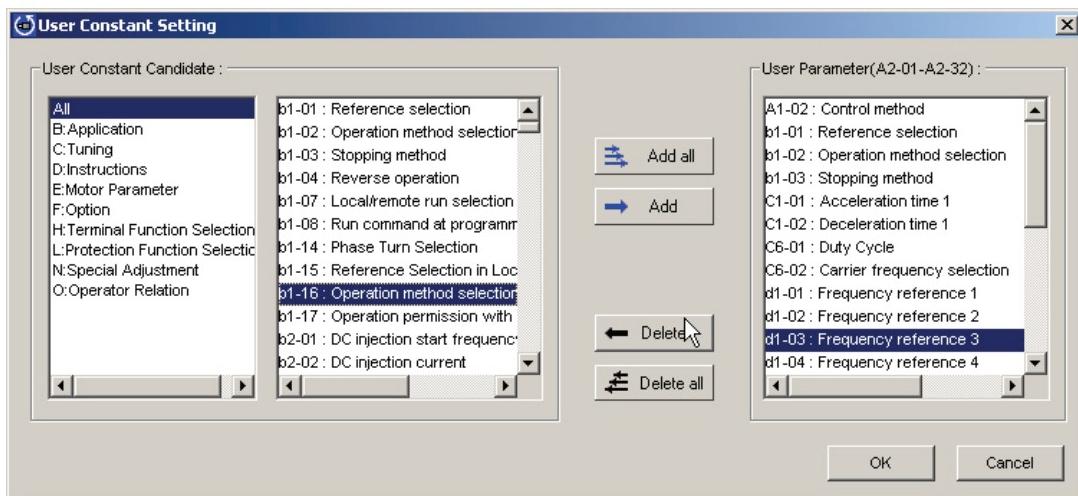
User Parameter Setting

Setting parameters to the User Access Level creates a select list of parameters that can be quickly viewed and edited. Select a parameter from "A2: Favorite Parameters Setting" from the parameter list and click ..., or double-click on the appropriate row. The following window will appear:

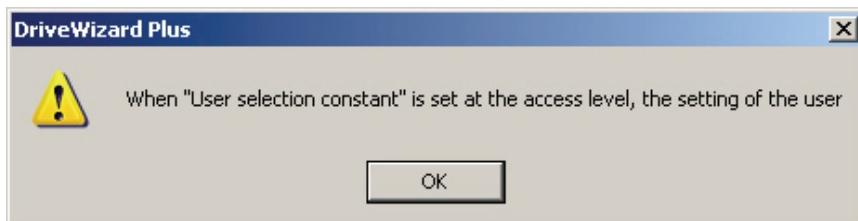


Select the parameter to add to the User Parameter list and click “Add”.

Parameters that have been set to the User Parameter List will appear in the corresponding box on the right.



Click “OK” to accept these changes, or click “Cancel” if you decide you do not want to make the changes listed in the window. DriveWizard Plus will return to the Parameter Edit Screen.

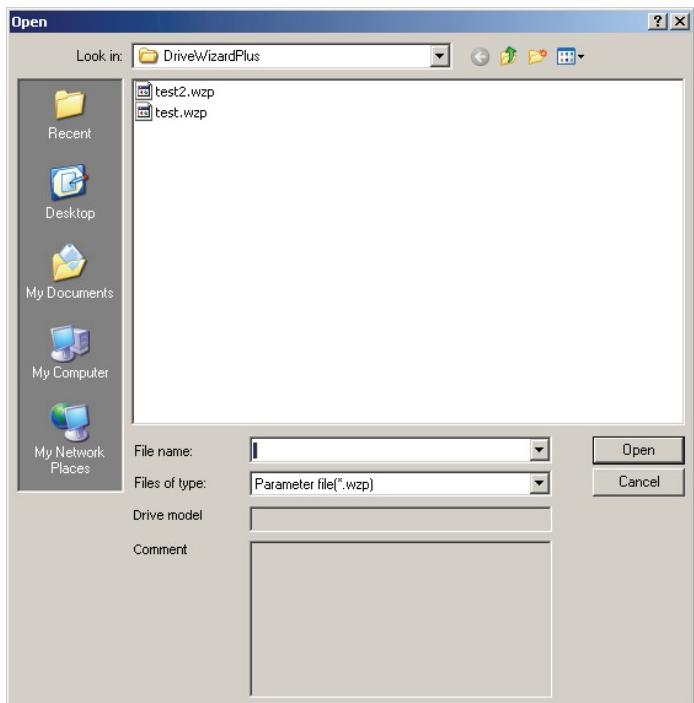


Clicking “OK” will save the changes that were made and DriveWizard Plus will return to the Parameter Edit Screen.

Comparing Files

To compare all parameter settings (both those displayed in the current window as well as those that aren't displayed) from one file with all parameter settings in another file, follow the directions below.

Click on the “File Compare”  button located on the toolbar. The following screen will appear:



Select the file you wish to compare and click "Open". The following message will appear:



If you do not wish to compare the file, click "Cancel" and the screen will return to the Parameter Edit window. Click "OK" to compare the files. When finished, the following screen will appear:

When all parameters agree

A message appears, indicating that parameters match the file.



When parameters do not agree

The Status bar will read, “Parameters settings differ.”

A list of the parameter setting differences will appear as shown below:

Comparison results with file					
No.	Name	Working value	Units	File's value	File's unit
d1-01	Frequency reference 1	0.00	Hz	0.10	Hz

To save the file compare results, right-click on the Results window and select “Save” from the pop-up menu.

4.2.2 Direct Parameter Edit

The Direct Parameter Edit window lets you view and edit parameter settings.

NOTE: Changes made in the “Direct Parameter Edit” window are immediately saved to the drive.

Follow the procedure below to directly edit parameter settings.

- 1) Starting in the Main Screen, go to “View” and “Direct Parameter Edit”. The screen shown below will appear.

NOTE: When a different model of drive is connected, previously edited parameter settings will be returned to their default value.

No.	Name	Working v...	Units	Drive's value	Drive's unit	Min	Max	Default
b1-14	Phase Tur...	0 : Normal	-	0	-	0	1	0
C1-03	Accelerati...	10.0	sec	10.0	sec	0.0	6000.0	10.0
C1-01	Accelerati...	10.0	sec	10.0	sec	0.0	6000.0	10.0
A2-07	User para...	C6-01 : Du...	-	0223	-	0180	0528	0223
C6-01	Duty Cycle	1 : ND(VT)	-	1	-	0	1	1

There are three ways to add parameters to the list above:

- Select, “Add to Direct Parameter Edit” from the pop-up menu in the Parameter Edit window.
- Manually enter the parameter number into the “Number” column.
- Drag and drop from the Parameter Edit window into the Direct Parameter Edit window.

Be careful when entering values into the Working value column, as these new settings will be written immediately to the drive. After settings are changed, the Parameter Edit window is refreshed and the new values displayed.

NOTE: Parameters that are grayed out cannot be edited. Parameters that cannot be changed while the drive is running the motor will also be grayed out during run. Stop the drive to edit those parameters.

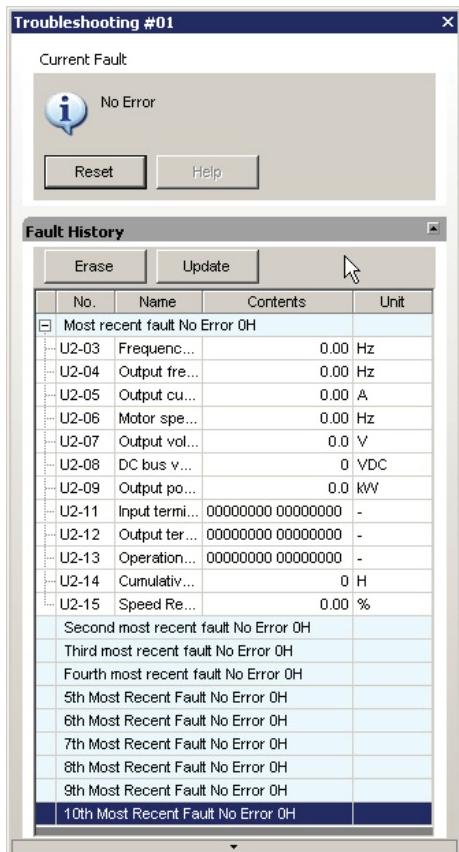
- 2) To remove parameters from the list, right-click on the parameter and select, “Remove” from the pop-up menu. You can also select the parameter and click “Delete” to remove it.

4.3 Troubleshooting

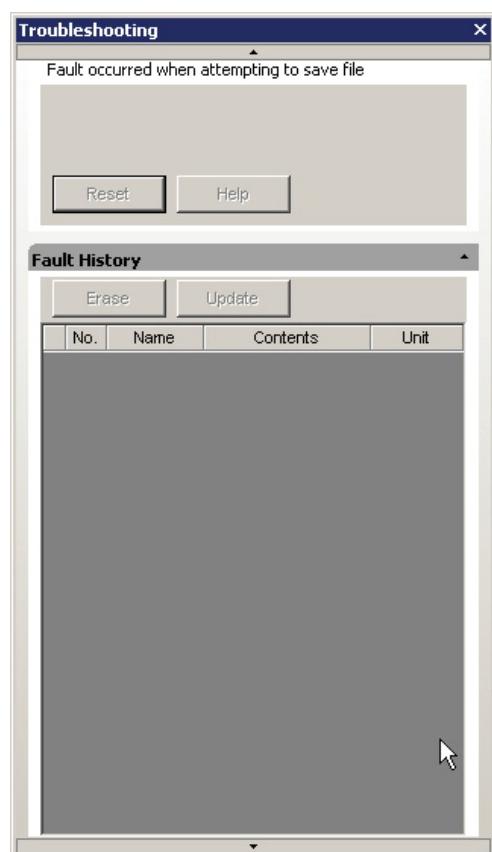
The Troubleshooting function lets you view and verify fault information for the drive that is currently connected.

NOTE: This display will be blank if the drive is not online or is not connected.

To display the Troubleshooting window, go to the DriveWizard Plus Function Tree or select “View (V)” from the Main Menu and select “Troubleshooting”. The Troubleshooting window can be displayed as a docking window or as a floating window.

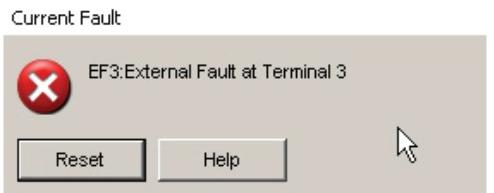


Troubleshooting Screen with Drive Online



Troubleshooting Screen with Drive Offline

4.3.1 Current Fault



The message above will appear when a fault occurs. If the drive is operating normally without any problems, the Status window will read, "Normal".

When a fault occurs, a message will appear showing the name of the fault, and will remain until the fault is cleared or until another fault occurs.

Fault Reset

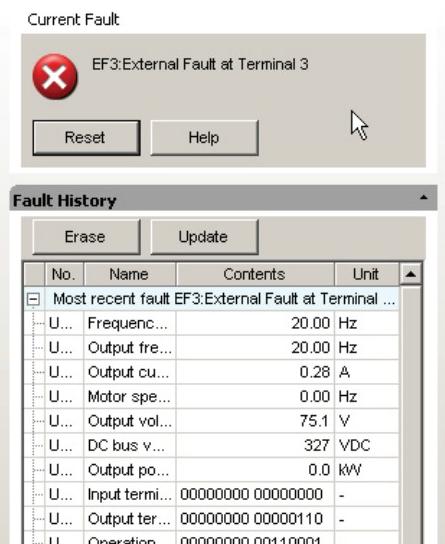
To reset a fault, remove whatever is causing the fault and click the "Reset" button that appears in the fault message box. You can also reset the fault using the digital operator on the drive if DriveWizard Plus is closed before the fault is cleared.

4.3.2 Fault History Display

You can view the current fault and any other faults that have already occurred using the History Display. The drive saves data on faults that have occurred, including the order in which the faults occurred, and information on the total operation time of the drive when the fault happened.

The Fault History lists the most recent faults first so that the most recent fault appears at the top of the list in the display window.

NOTE: DriveWizard Plus keeps track of a maximum of four faults. (The maximum number of faults that are displayed differs in accordance with the model used.)



No.	Name	Contents	Unit
Most recent fault EF3:External Fault at Terminal ...			
U...	Frequenc...	20.00	Hz
U...	Output fre...	20.00	Hz
U...	Output cu...	0.28	A
U...	Motor spe...	0.00	Hz
U...	Output vol...	75.1	V
U...	DC bus v...	327	VDC
U...	Output po...	0.0	kW
U...	Input termin...	00000000 00000000	-
U...	Output termin...	00000000 00000110	-
U...	Operation stati...	00000000 00110001	-

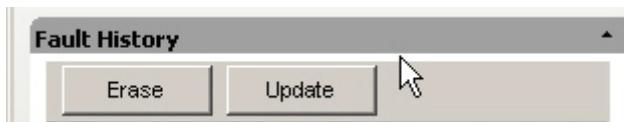
Below is an example of the data saved when a fault occurs:

No.	Name	Contents	Unit
Most recent fault EF3:External Fault at Terminal ...			
U...	Frequenc...	20.00	Hz
U...	Output fre...	20.00	Hz
U...	Output cu...	0.28	A
U...	Motor spe...	0.00	Hz
U...	Output vol...	75.1	V
U...	DC bus v...	327	VDC
U...	Output po...	0.0	kW
U...	Input termi...	00000000 00000000	-
U...	Output ter...	00000000 00000110	-
U...	Operation...	00000000 00110001	-
U...	Cumulativ...	41	H
U...	Speed Re...	20.00	%
Second most recent fault No Error 0H			
Third most recent fault No Error 0H			
Fourth most recent fault No Error 0H			
5th Most Recent Fault No Error 0H			
6th Most Recent Fault No Error 0H			
7th Most Recent Fault No Error 0H			

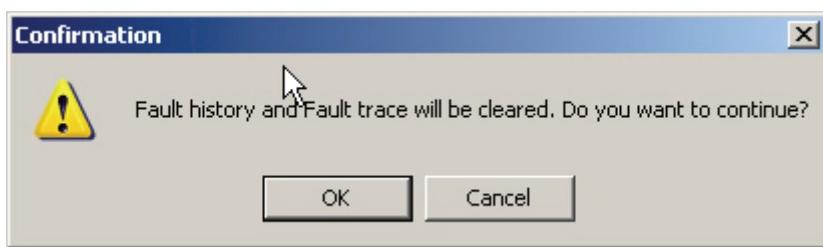
4.3.3 Clearing the Fault History

To erase the data saved to the Fault History, click “Delete”.

NOTE: Depending on the drive, it may not be possible to erase data from previous faults.



Clicking “Erase” will generate the following warning message:



Click “Cancel” if you do not want to erase the information; DriveWizard Plus will return to the Troubleshooting display. Clicking “OK” will clear the contents saved to the Fault History.

NOTE: After clearing the Fault History or other fault data, remove the cause of the fault and reset the fault using the digital operator on the drive. If the Fault History or fault data is erased before the fault is properly reset, the digital operator will indicate that the drive is ready operate the motor, although the cause of the fault still exists. In such occasions DriveWizard Plus will indicate that a fault is still present.

4.3.4 Updating the Fault History

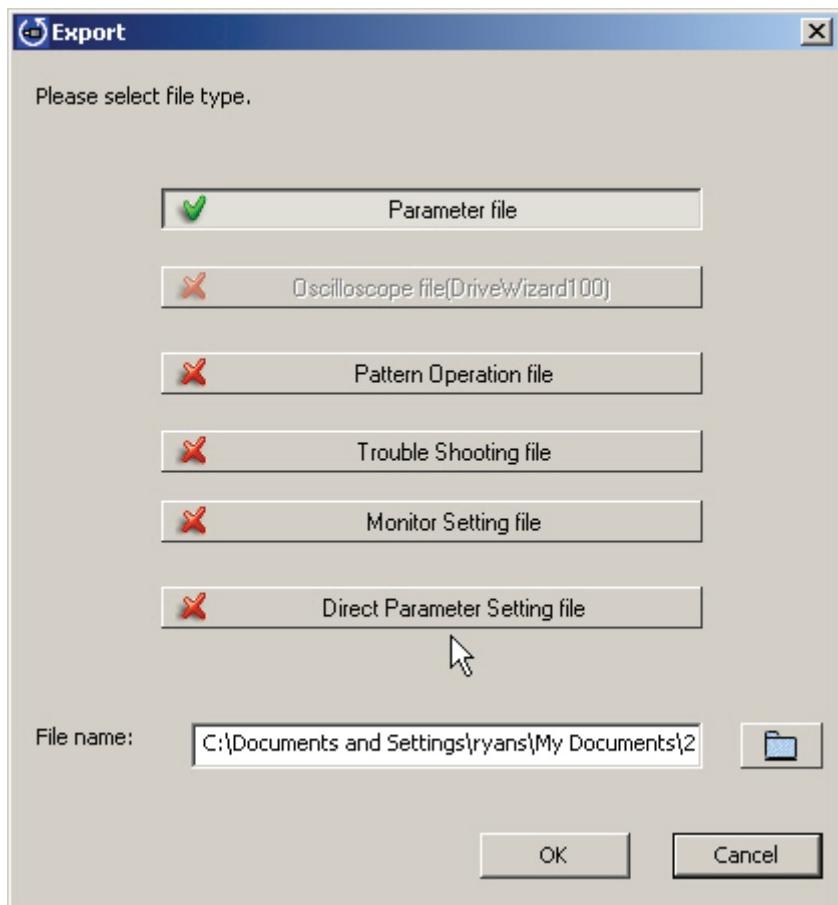
To update the Fault History display, click “Update”.



4.3.5 Saving the Fault History

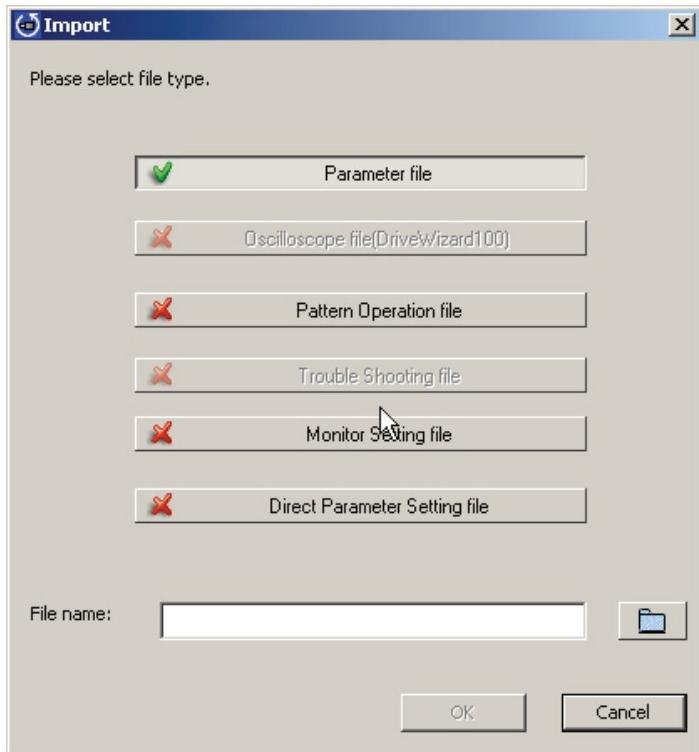
To save the Fault History, use the Export function.

Under “File”, select “Export (E)”.



4.3.6 Reading the Fault History

If the drive is not connected to the PC, you can still view Troubleshooting data that was saved previously. Go the Main Menu, select “View (V)”, and then click “Troubleshooting”. You can also go to “File (F)” in the Main Menu, and then select “Import (I)”. The following window will appear:



4.4 Monitor

Monitors allow you to view various aspects of drive performance including operation status and I/O signal settings. There are five types of Monitor displays: All Monitors, User Monitors, I/O Monitors, Status Monitors, and Operation Monitors.

4.4.1 All Monitors

When the drive is connected, a window displaying all monitor items will appear automatically. If the drive is not connected, the window will appear blank as shown below:



All Monitors Display Window (Drive Offline)

When the drive is connected, all monitor items will appear automatically as shown in the screen below.
 When a Project is open and a drive is connected, monitor items will appear in the order that they have been saved to the Project.

Parameter No.	Name	Value	Unit	Max	Min	A
<input checked="" type="checkbox"/> U1-01	Frequency reference	0.00	Hz	0.00	0.00	0.
<input checked="" type="checkbox"/> U1-02	Output frequency	0.00	Hz	20....	0.00	3.
<input checked="" type="checkbox"/> U1-03	Output current	0.00	A	0.00	0.00	0.
<input checked="" type="checkbox"/> U1-04	Control method	0		0	0	0
<input checked="" type="checkbox"/> U1-05	Motor speed	0.00	Hz	0.00	0.00	0.
<input checked="" type="checkbox"/> U1-06	Output voltage	0.0	VAC	0.0	0.0	0.
<input checked="" type="checkbox"/> U1-07	DC bus voltage	329	VDC	330	328	3.
<input checked="" type="checkbox"/> U1-08	Output power	0.00	kW	0.00	0.00	0.
<input checked="" type="checkbox"/> U1-10 - 00	Terminal S1	Open		-	-	-
<input checked="" type="checkbox"/> U1-10 - 01	Terminal S2	Open		-	-	-
<input checked="" type="checkbox"/> U1-10 - 02	Terminal S3	Open		-	-	-
<input checked="" type="checkbox"/> U1-10 - 03	Terminal S4	Open		-	-	-
<input checked="" type="checkbox"/> U1-10 - 04	Terminal S5	Open		-	-	-
<input checked="" type="checkbox"/> U1-10 - 05	Terminal S6	Open		-	-	-
<input checked="" type="checkbox"/> U1-10 - 06	Terminal S7	Open		-	-	-
<input checked="" type="checkbox"/> U1-11 - 00	Photocoupler 1(Terminal ...	Open		-	-	-
<input checked="" type="checkbox"/> U1-11 - 01	Photocoupler 2(Terminal ...	Open		-	-	-
<input checked="" type="checkbox"/> U1-11 - 02	Terminal Output(Terminal...	OFF		-	-	-
<input checked="" type="checkbox"/> U1-12 - 00	During Run	Stop...		-	-	-
<input checked="" type="checkbox"/> U1-12 - 01	During zero speed	At z...		-	-	-
<input checked="" type="checkbox"/> U1-12 - 02	During reverse	For...		-	-	-
<input checked="" type="checkbox"/> U1-12 - 03	During external reset sig...	Time...		-	-	-
<input checked="" type="checkbox"/> U1-12 - 04	During speed agree	Time...		-	-	-

All Monitors Display Window (Drive Online)

If the drive is disconnected, then monitors will appear as shown below:

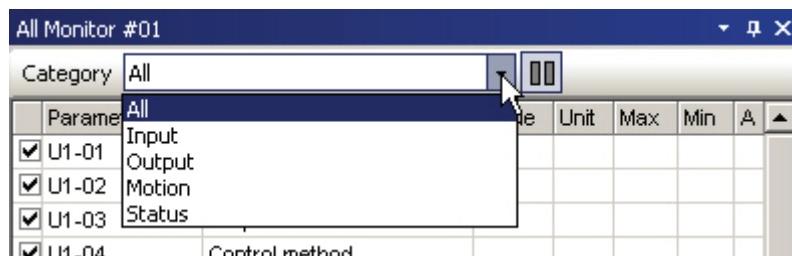
Parameter No.	Name	Value	Unit	Max	Min	A
<input checked="" type="checkbox"/> U1-01	Frequency reference	Time...	Hz	0.00	0.00	0.
<input checked="" type="checkbox"/> U1-02	Output frequency	Time...	Hz	20....	0.00	2.
<input checked="" type="checkbox"/> U1-03	Output current	Time...	A	0.00	0.00	0.
<input checked="" type="checkbox"/> U1-04	Control method	Time...		0	0	0
<input checked="" type="checkbox"/> U1-05	Motor speed	Time...	Hz	0.00	0.00	0.
<input checked="" type="checkbox"/> U1-06	Output voltage	Time...	VAC	0.0	0.0	0.
<input checked="" type="checkbox"/> U1-07	DC bus voltage	Time...	VDC	330	97	3.
<input checked="" type="checkbox"/> U1-08	Output power	Time...	kW	0.00	0.00	0.
<input checked="" type="checkbox"/> U1-10 - 00	Terminal S1	Time...		-	-	-
<input checked="" type="checkbox"/> U1-10 - 01	Terminal S2	Time...		-	-	-
<input checked="" type="checkbox"/> U1-10 - 02	Terminal S3	Time...		-	-	-
<input checked="" type="checkbox"/> U1-10 - 03	Terminal S4	Time...		-	-	-
<input checked="" type="checkbox"/> U1-10 - 04	Terminal S5	Time...		-	-	-
<input checked="" type="checkbox"/> U1-10 - 05	Terminal S6	Time...		-	-	-
<input checked="" type="checkbox"/> U1-10 - 06	Terminal S7	Time...		-	-	-
<input checked="" type="checkbox"/> U1-11 - 00	Photocoupler 1(Terminal ...	Time...		-	-	-
<input checked="" type="checkbox"/> U1-11 - 01	Photocoupler 2(Terminal ...	Time...		-	-	-
<input checked="" type="checkbox"/> U1-11 - 02	Terminal Output(Terminal...	Time...		-	-	-
<input checked="" type="checkbox"/> U1-12 - 00	During Run	Time...		-	-	-
<input checked="" type="checkbox"/> U1-12 - 01	During zero speed	Time...		-	-	-
<input checked="" type="checkbox"/> U1-12 - 02	During reverse	Time...		-	-	-
<input checked="" type="checkbox"/> U1-12 - 03	During external reset sig...	Time...		-	-	-
<input checked="" type="checkbox"/> U1-12 - 04	During speed agree	Time...		-	-	-

All Monitors Display Window (Drive Connection Interrupted)

Main Screen Display

Select the type of monitors that are displayed as described below.

Monitors can be arranged and displayed using the combo-box in the Monitor display window.



This example shows the Monitor display after selecting to view Input monitors.

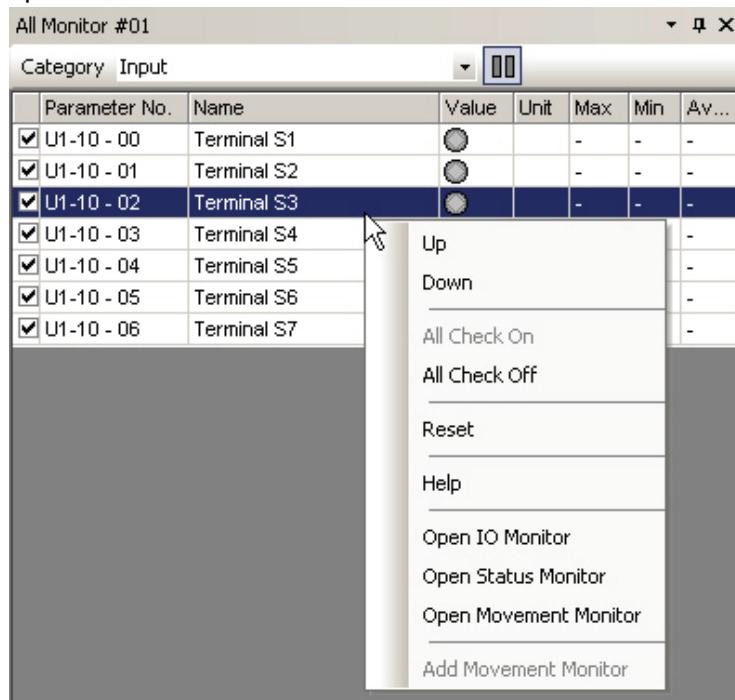
The screenshot shows the same "All Monitor #01" window, but now the "Category" dropdown is set to "Input". The list of parameters has been filtered to show only input-related items: U1-10 - 00 through U1-10 - 06. Each of these parameters has a checkmark next to it. The "Control method" section is still present at the bottom.

Parameter No.	Name	Value	Unit	Max	Min	Avg
U1-10 - 00	Terminal S1	●	-	-	-	-
U1-10 - 01	Terminal S2	●	-	-	-	-
U1-10 - 02	Terminal S3	●	-	-	-	-
U1-10 - 03	Terminal S4	●	-	-	-	-
U1-10 - 04	Terminal S5	●	-	-	-	-
U1-10 - 05	Terminal S6	●	-	-	-	-
U1-10 - 06	Terminal S7	●	-	-	-	-

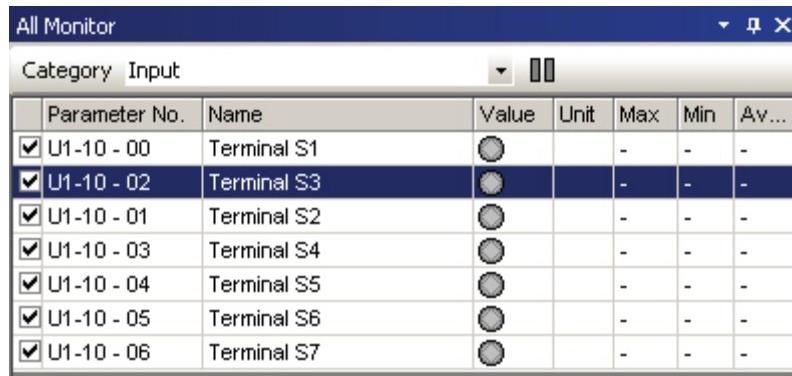
NOTE: When changing between input and output monitor displays, DriveWizard Plus maps out the I/O settings.

Setting the order in which monitors are displayed

Right-click on the monitor items selected in the monitor screen and select the desired order from the pop-up menu.



Selecting Monitor Order



After Selecting the Order

Another way to select the order of the monitors is to select the monitor and use the Shift and ↑ or ↓ keys. It is also possible to use the mouse to drag and drop monitors in the desired order.

Monitor Status Display

To display specific monitors, click on the check box located in the far left column of each row. To select all monitors right-click on the window and select “Check All” from the pop-up menu.

All Monitor							
Category		All					
Parameter No.	Name	Value	Unit	Max	Min	A	▲
<input type="checkbox"/> U1-01	Frequency reference	-	-	-	-	-	
<input type="checkbox"/> U1-02	Output frequency	-	-	-	-	-	
<input type="checkbox"/> U1-03	Output current	-	-	-	-	-	
<input type="checkbox"/> U1-04	Control method	-	-	-	-	-	
<input type="checkbox"/> U1-05	Motor speed	-	-	-	-	-	

Monitors that have been checked will display data in each column.

All Monitor							
Category		All					
Parameter No.	Name	Value	Unit	Max	Min	A	▲
<input checked="" type="checkbox"/> U1-01	Frequency reference	0.00	Hz	0.00	0.00	0.0	
<input type="checkbox"/> U1-02	Output frequency	-	-	-	-	-	
<input type="checkbox"/> U1-03	Output current	-	-	-	-	-	
<input type="checkbox"/> U1-04	Control method	-	-	-	-	-	
<input type="checkbox"/> U1-05	Motor speed	-	-	-	-	-	

NOTE: The first display screen shows all monitors as checked and has all data displayed.

Hold

By clicking the “Hold” button, the values displayed in the monitor will no longer be refreshed. To update the data that is currently frozen, click “Hold” again.

Tool Tips

If the mouse pointer rests on one of the monitors, a “tool tip” will appear listing monitor data.

All Monitor							
Category		All					
Parameter No.	Value	Name	Max	Average	Min	Unit	
<input checked="" type="checkbox"/> U1-01	0.00	Frequency reference	0.00	0.00	0.00	Hz	
<input checked="" type="checkbox"/> U1-02	0.00	Output frequency	48...	2.55	0.00	Hz	
<input checked="" type="checkbox"/> U1-03	0.00	Output current	0.00	0.00	0.00	A	
<input checked="" type="checkbox"/> U1-04	0	Control method	2	0	0		
<input checked="" type="checkbox"/> U1-05	0.00	Motor speed	0.00	0.00	0.00	Hz	
<input checked="" type="checkbox"/> U1-06	0.0	Output voltage	0.0	0.0	0.0	V	
<input checked="" type="checkbox"/> U1-07	322	DC bus voltage	325	321	320	V	
<input checked="" type="checkbox"/> U1-08	0.00	Output power	0.00	0.00	0.00	W	
<input checked="" type="checkbox"/> U1-10 - 00	Open	Terminal S1	-	-	-		
<input checked="" type="checkbox"/> U1-10 - 01	Open	Terminal S2	-	-	-		
<input checked="" type="checkbox"/> U1-10 - 02	Open	Terminal S3	-	-	-		
<input checked="" type="checkbox"/> U1-10 - 03	Open	Terminal S4	-	-	-		
<input checked="" type="checkbox"/> U1-10 - 04	Open	Terminal S5	-	-	-		
<input checked="" type="checkbox"/> U1-10 - 05	Open	Terminal S6	-	-	-		
<input checked="" type="checkbox"/> U1-10 - 06	Open	Terminal S7	-	-	-		

Column Heading

Column headings describe the type of data listed in the column.

	Parameter No.	Name	Value	Unit	Max	Min	Average
<input checked="" type="checkbox"/>	U1-01	Frequency reference	0.00	Hz	0.00	0.00	0.00
<input checked="" type="checkbox"/>	U1-02	Output frequency	0.00	Hz	0.00	0.00	0.00
<input checked="" type="checkbox"/>	U1-03	Output current	0.00	A	0.00	0.00	0.00
<input checked="" type="checkbox"/>	U1-04	Control method	0		0	0	0
<input checked="" type="checkbox"/>	U1-05	Motor speed	0.00	Hz	0.00	0.00	0.00
<input checked="" type="checkbox"/>	U1-06	Output voltage	0.0	VAC	0.0	0.0	0.0

You can move columns by using the mouse to drag and drop the columns into the desired order.

	Parameter No.	Value	Name	Unit	Max	Min	Average
<input checked="" type="checkbox"/>	U1-01	0.00	Frequency reference	Hz	0.00	0.00	0.00
<input checked="" type="checkbox"/>	U1-02	0.00	Output frequency	Hz	0.00	0.00	0.00
<input checked="" type="checkbox"/>	U1-03	0.00	Output current	A	0.00	0.00	0.00
<input checked="" type="checkbox"/>	U1-04	0	Control method		0	0	0
<input checked="" type="checkbox"/>	U1-05	0.00	Motor speed	Hz	0.00	0.00	0.00
<input checked="" type="checkbox"/>	U1-06	0.0	Output voltage	VAC	0.0	0.0	0.0

Right-clicking on a column head displays a pop-up menu that lets you hide or show certain columns.

	Parameter No.	Value	Name	Unit	Max	Min	Average
<input checked="" type="checkbox"/>	U1-01	0.00	Frequency reference	Hz	0.00	0.00	0.00
<input checked="" type="checkbox"/>	U1-02	0.00	Output frequency	Hz	0.00	0.00	0.00
<input checked="" type="checkbox"/>	U1-03	0.00	Output current	A	0.00	0.00	0.00
<input checked="" type="checkbox"/>	U1-04	0	Control method		0	0	0
<input checked="" type="checkbox"/>	U1-05	0.00	Motor speed	Hz	0.00	0.00	0.00
<input checked="" type="checkbox"/>	U1-06	0.0	Output voltage	VAC	0.0	0.0	0.0
<input checked="" type="checkbox"/>	U1-07	323	DC bus voltage	VDC	324	322	322

The following example shows how to hide a column:

	Parameter No.	Value	Name	Max	Average
<input checked="" type="checkbox"/>	U1-01	<input checked="" type="checkbox"/> Name	Frequency reference	0.00	0.00
<input checked="" type="checkbox"/>	U1-02	<input checked="" type="checkbox"/> Unit	Output frequency	0.00	0.00
<input checked="" type="checkbox"/>	U1-03	<input checked="" type="checkbox"/> Max	Output current	0.00	0.00
<input checked="" type="checkbox"/>	U1-04	<input checked="" type="checkbox"/> Min	Control method	0	0
<input checked="" type="checkbox"/>	U1-05	<input checked="" type="checkbox"/> Average	Motor speed	0.00	0.00
<input checked="" type="checkbox"/>	U1-06		Output voltage	0.0	0.0
<input checked="" type="checkbox"/>	U1-07		DC bus voltage	324	322

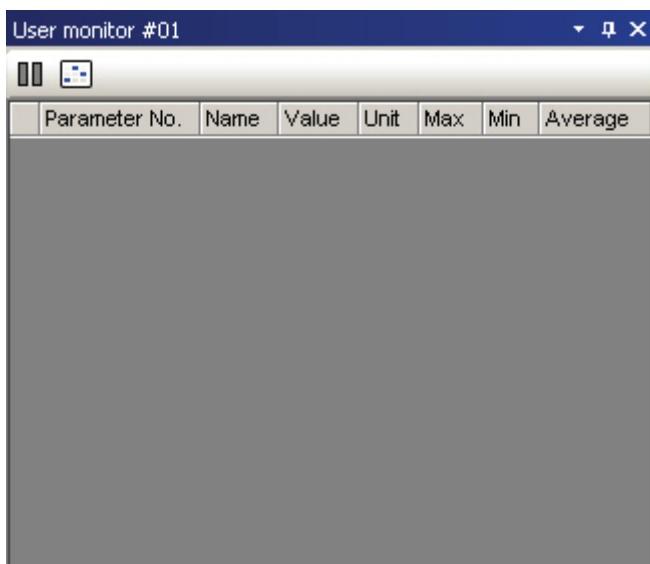
4.4.2 User Monitor

User Monitors can be selected and displayed using the Monitor Setting Dialog. If the drive is not connected when the User Monitor is displayed, a window that looks like this will appear:



User Monitor Screen (Drive Offline)

When the drive is first connected, the display will initially be blank.



User Monitor Screen (Drive Online)

If the drive is connected while a Project is open, then the monitor items that were previously saved to that Project will appear as shown below:

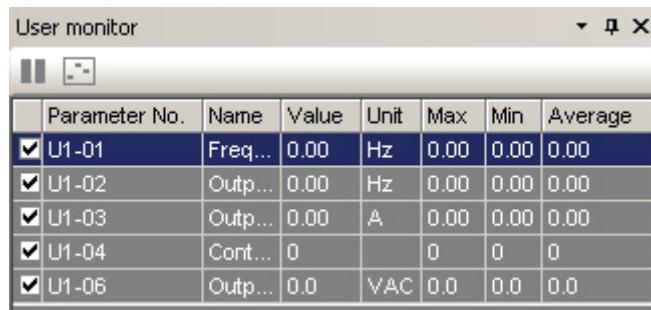


The screenshot shows a software window titled "User monitor #01". The window has a toolbar with icons for zooming and closing. Below the toolbar is a table with columns: Parameter No., Name, Value, Unit, Max, Min, and Average. Six rows are listed, each with a checked checkbox in the first column. The parameters are U1-01 through U1-06, with values ranging from 0.00 to 0.0.

Parameter No.	Name	Value	Unit	Max	Min	Average
✓ U1-01	Freq...	0.00	Hz	0.00	0.00	0.00
✓ U1-02	Outp...	0.00	Hz	0.00	0.00	0.00
✓ U1-03	Outp...	0.00	A	0.00	0.00	0.00
✓ U1-04	Cont...	0		0	0	0
✓ U1-06	Outp...	0.0	VAC	0.0	0.0	0.0

User Monitor Screen (Drive Connected while Project is Open)

If the drive is suddenly disconnected, then the monitor items will appear as follows:



The screenshot shows a software window titled "User monitor". The window has a toolbar with icons for zooming and closing. Below the toolbar is a table with columns: Parameter No., Name, Value, Unit, Max, Min, and Average. Six rows are listed, each with a checked checkbox in the first column. The parameters are U1-01 through U1-06, with values ranging from 0.00 to 0.0.

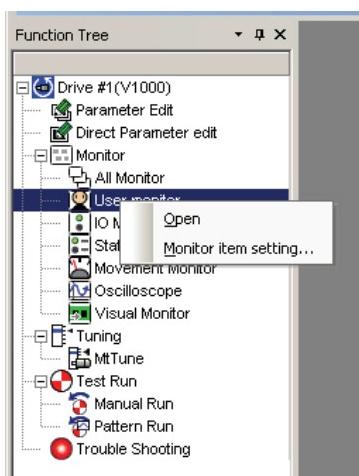
Parameter No.	Name	Value	Unit	Max	Min	Average
✓ U1-01	Freq...	0.00	Hz	0.00	0.00	0.00
✓ U1-02	Outp...	0.00	Hz	0.00	0.00	0.00
✓ U1-03	Outp...	0.00	A	0.00	0.00	0.00
✓ U1-04	Cont...	0		0	0	0
✓ U1-06	Outp...	0.0	VAC	0.0	0.0	0.0

User Monitor Screen (Drive Connection Interrupted)

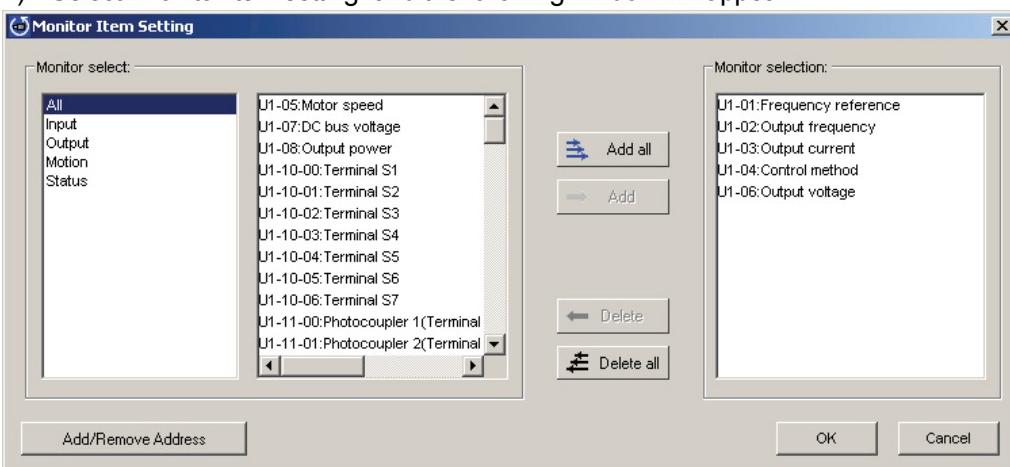
Main Screen Display

To select the order in which User Monitors are displayed, follow the instructions below.

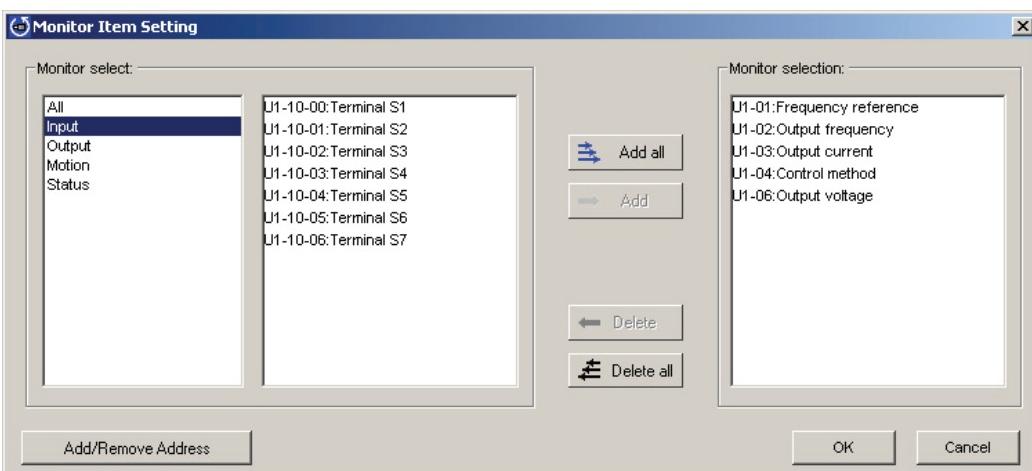
- 1) Right-click on the “User Monitor” in the Function Tree to open the pop-up menu as shown:



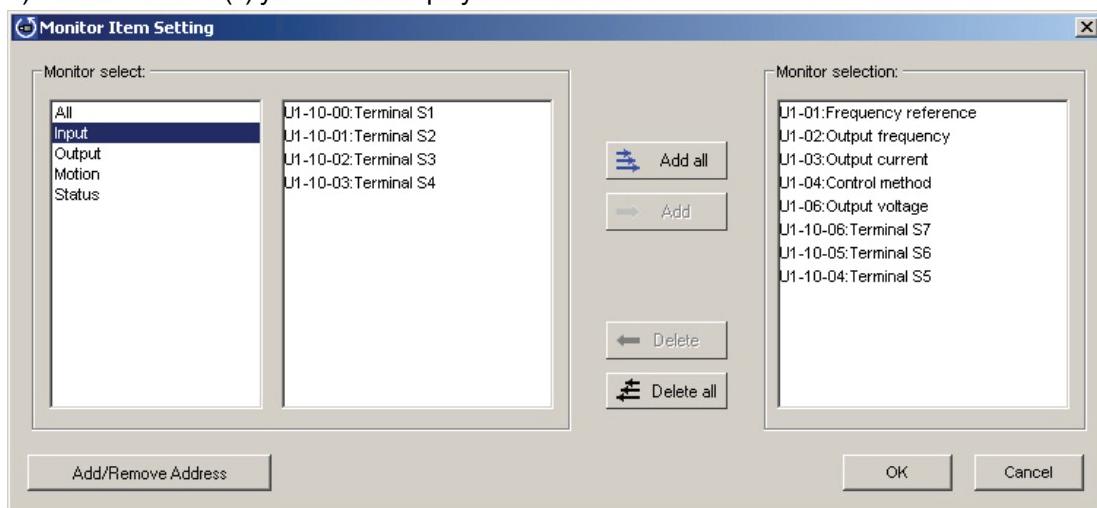
- 2) Select “Monitor item setting” and the following window will appear:



- 3) A list of monitor items and categories will appear.



- 4) Select the item(s) you wish to display and click “Add”.



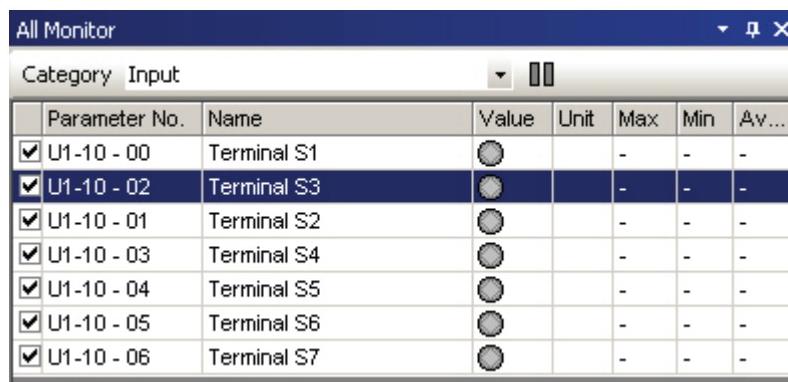
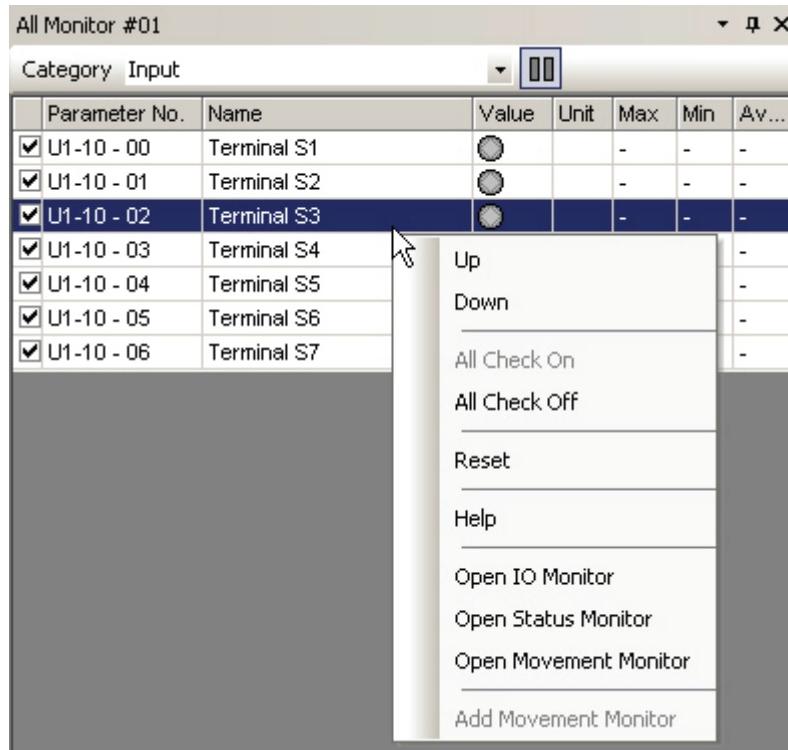
- 5) Click “OK”. Items selected will then appear in the User Monitor screen.

User monitor #01							
	Parameter No.	Name	Value	Unit	Max	Min	Average
<input checked="" type="checkbox"/>	U1-01	Freq...	0.00	Hz	0.00	0.00	0.00
<input checked="" type="checkbox"/>	U1-02	Outp...	0.00	Hz	0.00	0.00	0.00
<input checked="" type="checkbox"/>	U1-03	Outp...	0.00	A	0.00	0.00	0.00
<input checked="" type="checkbox"/>	U1-04	Cont...	0		0	0	0
<input checked="" type="checkbox"/>	U1-06	Outp...	0.0	VAC	0.0	0.0	0.0
<input checked="" type="checkbox"/>	U1-10 - 06	Term...	Open		-	-	-
<input checked="" type="checkbox"/>	U1-10 - 05	Term...	Open		-	-	-
<input checked="" type="checkbox"/>	U1-10 - 04	Term...	Open		-	-	-

Double-clicking on items in the User Monitor window will also display monitor items.

(2) Setting the order in which monitors are displayed

Right-click on the monitor items selected in the monitor screen and select the desired order from the pop-up menu.



Another way to select the order of the monitors is to select the monitor and use the Shift and ↑ or ↓ keys together.

It is also possible to use the mouse to drag and drop monitors in the desired order.

Monitor Status Display

To display specific monitors, click on the check box located in the far left column of each row. To select all monitors right-click on the window and select “Check All” from the pop-up menu.

Parameter No.	Name	Value	Unit	Max	Min	A
<input type="checkbox"/> U1-01	Frequency reference	-	-	-	-	-
<input type="checkbox"/> U1-02	Output frequency	-	-	-	-	-
<input type="checkbox"/> U1-03	Output current	-	-	-	-	-
<input type="checkbox"/> U1-04	Control method	-	-	-	-	-
<input type="checkbox"/> U1-05	Motor speed	-	-	-	-	-
<input type="checkbox"/> U1-06	Output voltage	-	-	-	-	-

Monitors that have been checked will display data in each column.

Parameter No.	Name	Value	Unit	Max	Min	A
<input checked="" type="checkbox"/> U1-01	Frequency reference	0.00	Hz	0.00	0.00	0.00
<input checked="" type="checkbox"/> U1-02	Output frequency	-	-	-	-	-
<input type="checkbox"/> U1-03	Output current	-	-	-	-	-
<input type="checkbox"/> U1-04	Control method	-	-	-	-	-
<input type="checkbox"/> U1-05	Motor speed	-	-	-	-	-
<input type="checkbox"/> U1-06	Output voltage	-	-	-	-	-
<input type="checkbox"/> U1-07	DC bus voltage	-	-	-	-	-
<input type="checkbox"/> U1-08	Output power	-	-	-	-	-

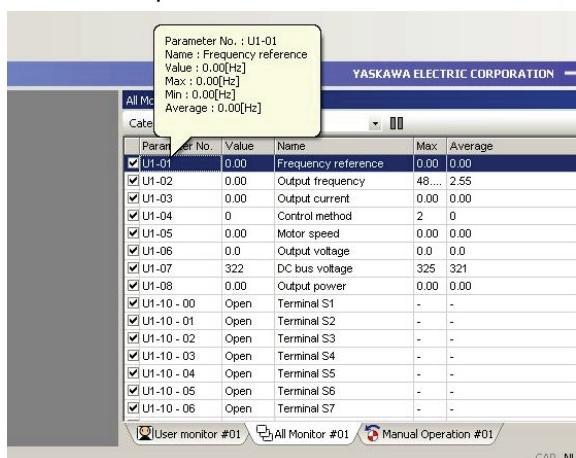
The first display screen shown has all monitors checked and all data displayed.

Hold

By clicking “Hold”, the values displayed in the monitor will no longer be refreshed. To update the data that is currently frozen, click “Hold”.

Tool Tips

If the mouse pointer rests on one of the monitors, a “tool tip” will appear listing monitor data.



Column heading

Column headings describe the type of data listed in the column.

	Parameter No.	Name	Value	Unit	Max	Min	Average
<input checked="" type="checkbox"/>	U1-01	Frequency reference	0.00	Hz	0.00	0.00	0.00
<input checked="" type="checkbox"/>	U1-02	Output frequency	0.00	Hz	0.00	0.00	0.00
<input checked="" type="checkbox"/>	U1-03	Output current	0.00	A	0.00	0.00	0.00
<input checked="" type="checkbox"/>	U1-04	Control method	0		0	0	0
<input checked="" type="checkbox"/>	U1-05	Motor speed	0.00	Hz	0.00	0.00	0.00

You can move columns by using the mouse to drag and drop the columns into the desired order.

	Parameter No.	Value	Name	Unit	Max	Min	Average
<input checked="" type="checkbox"/>	U1-01	0.00	Frequency reference	Hz	0.00	0.00	0.00
<input checked="" type="checkbox"/>	U1-02	0.00	Output frequency	Hz	0.00	0.00	0.00
<input checked="" type="checkbox"/>	U1-03	0.00	Output current	A	0.00	0.00	0.00
<input checked="" type="checkbox"/>	U1-04	0	Control method		0	0	0
<input checked="" type="checkbox"/>	U1-05	0.00	Motor speed	Hz	0.00	0.00	0.00

Right-clicking on a column head displays a pop-up menu that lets you hide or show certain columns.

	Parameter No.	Value	Name	Unit	Max	Min	Average
<input checked="" type="checkbox"/>	U1-01	0.00	Frequency reference	Hz	0.00	0.00	0.00
<input checked="" type="checkbox"/>	U1-02	0.00	Output frequency	Hz	0.00	0.00	0.00
<input checked="" type="checkbox"/>	U1-03	0.00	Output current	A	0.00	0.00	0.00
<input checked="" type="checkbox"/>	U1-04	0	Control method		0	0	0
<input checked="" type="checkbox"/>	U1-05	0.00	Motor speed	Hz	0.00	0.00	0.00
<input checked="" type="checkbox"/>	U1-06	0.0	Output voltage	VAC	0.0	0.0	0.0
<input checked="" type="checkbox"/>	U1-07	323	DC bus voltage	VDC	324	322	322

The following example shows how to hide a column.

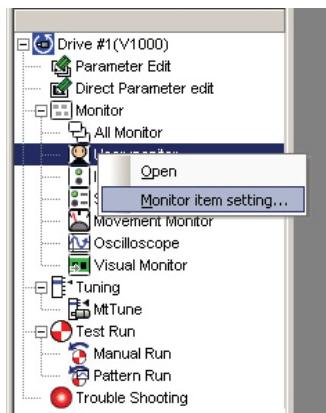
	Parameter No.	Value	Name	Max	Average
<input checked="" type="checkbox"/>	U1-01	<input checked="" type="checkbox"/> Name	Frequency reference	0.00	0.00
<input checked="" type="checkbox"/>	U1-02	<input checked="" type="checkbox"/> Unit	Output frequency	0.00	0.00
<input checked="" type="checkbox"/>	U1-03	<input checked="" type="checkbox"/> Max	Output current	0.00	0.00
<input checked="" type="checkbox"/>	U1-04	<input checked="" type="checkbox"/> Min	Control method	0	0
<input checked="" type="checkbox"/>	U1-05	<input checked="" type="checkbox"/> Average	Motor speed	0.00	0.00
<input checked="" type="checkbox"/>	U1-06		Output voltage	0.0	0.0
<input checked="" type="checkbox"/>	U1-07		DC bus voltage	324	322

Add or remove a Monitor Address

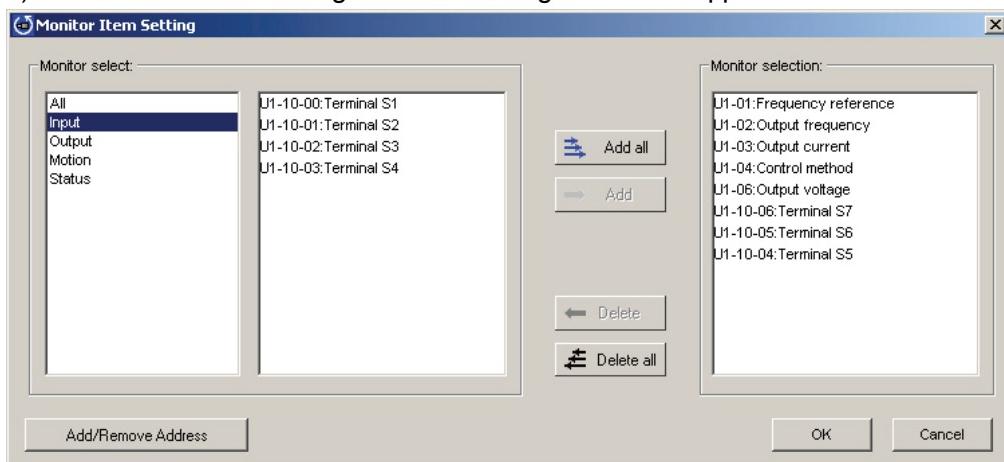
DriveWizard Plus lets you add a MEMOBUS/Modbus address to the monitor items to view user-selected parameters.

To add or delete a monitor address, follow the instructions below:

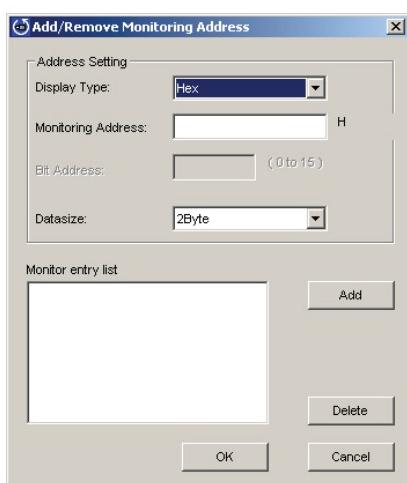
- 1) Right-click on “User Monitor” in the Function Tree.



- 2) Click “Monitor item setting” and the following window will appear



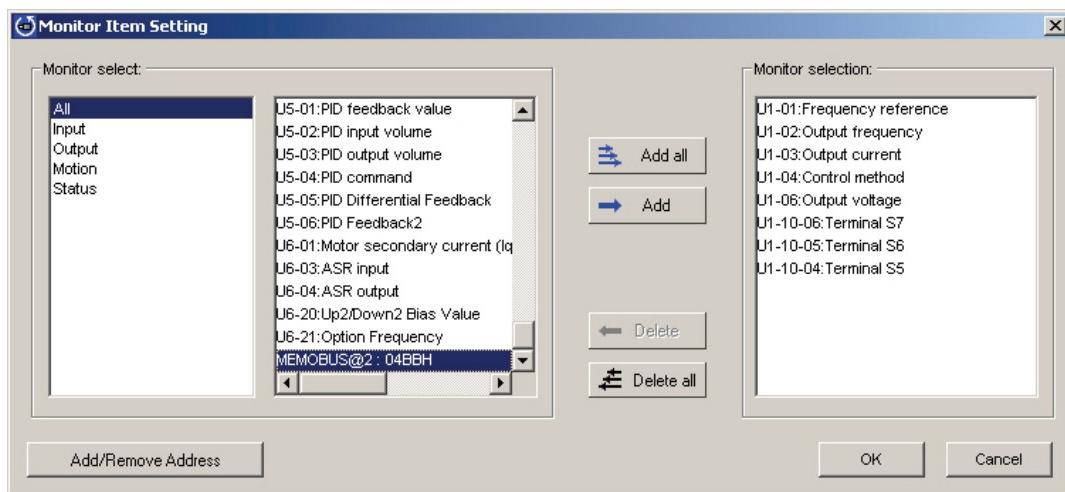
- 3) Click “Add/Remove Address” to open the following window:



- 4) Enter the necessary items and click "Add". If the addresses entered can be accessed, then those items will be added to the list of monitors. If access is not possible, a message will appear that indicates that the address entered is not allowed. Click "OK" to return to the "Add/Delete Monitor Address" window.



- 5) Clicking "OK" in the "Add/Remove Address" window will return you to the Monitor Item Setting window. Any added monitors will now be listed.

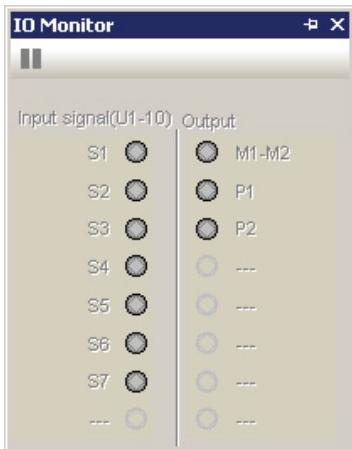


4.4.3 I/O Monitor

I/O monitors display the status of any input and output terminals that have been selected. The following window will appear automatically whenever the drive is connected to DriveWizard Plus:

Close Project

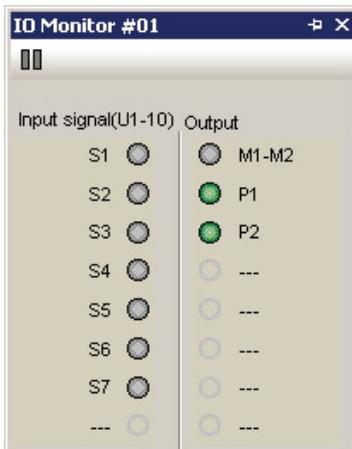
When the drive is not connected, the window will appear blank:



I/O Monitor Screen (Drive Offline)

Drive Online

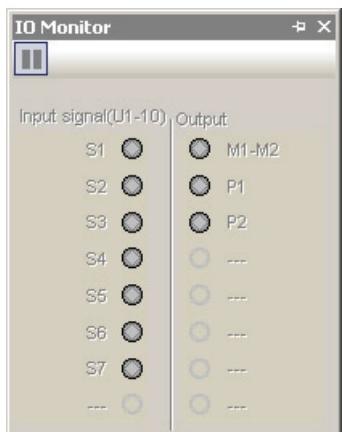
When the drive is connected, the following window will appear automatically:



I/O Monitor Screen (Drive Online)

Project Open

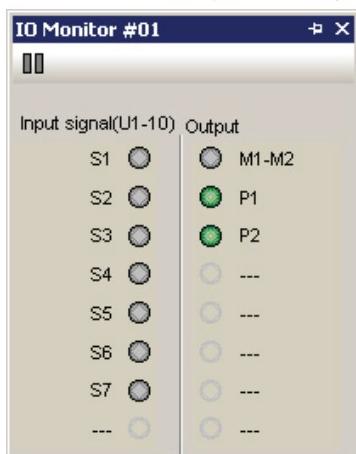
If a Project is open and the connection with the drive is suddenly interrupted, the window will appear as follows:



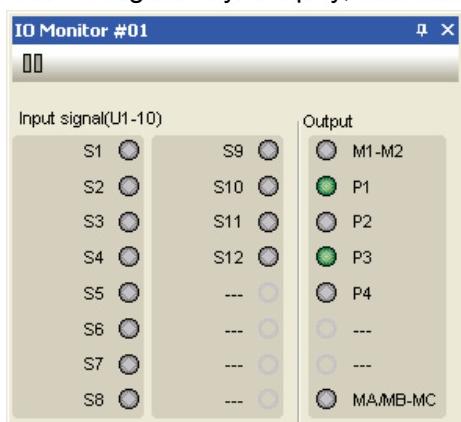
I/O Monitor Screen (Drive Connection Interrupted)

Main Screen Display

All monitor items appear automatically when viewing the I/O Monitor window. I/O data will appear much like an LED display, indicating the terminal name and the current input/output status.



When using a 16-byte display, the I/O Monitor window will be divided as follows:

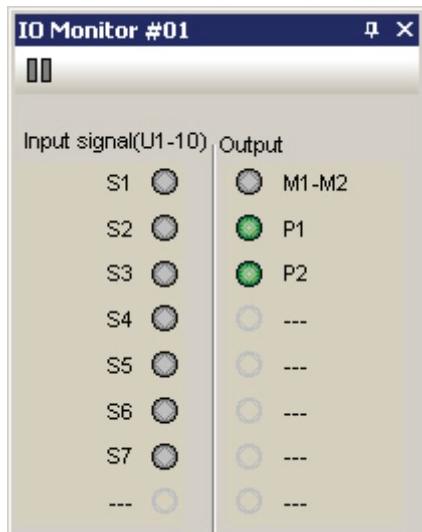


Display Status Switch

By clicking  in the Title Bar, you can switch the display status.

Auto-Reveal Monitor Status

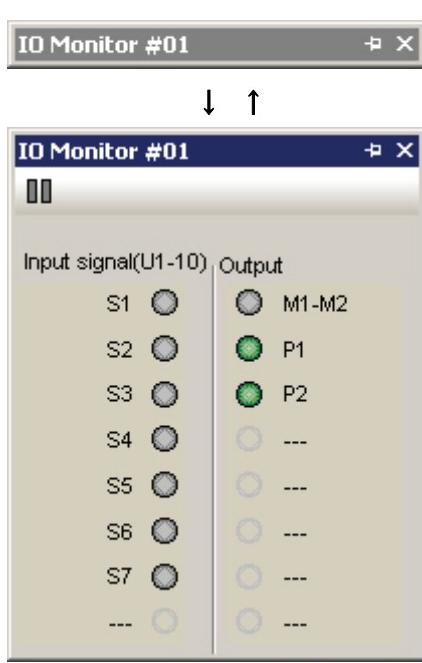
All items are usually displayed.



Auto Reveal Status 

Auto-Hide Monitor Status

When the display is hidden, the icon in the title bar will appear sideways. Click on the icon to reveal the entire window.



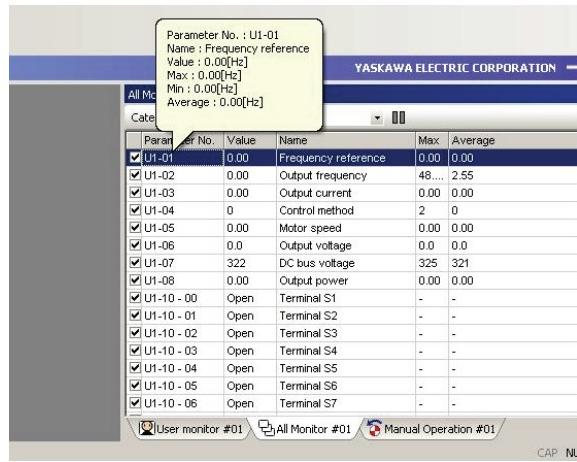
Auto-Hide 

Monitor Start/Stop

Clicking  ("Monitor Start/Stop") will freeze the monitors at their current values. Click  again to update the monitors with data from the drive.

Tool Tips

If the mouse pointer rests on one of the monitors, a "tool tip" will appear listing monitor data.

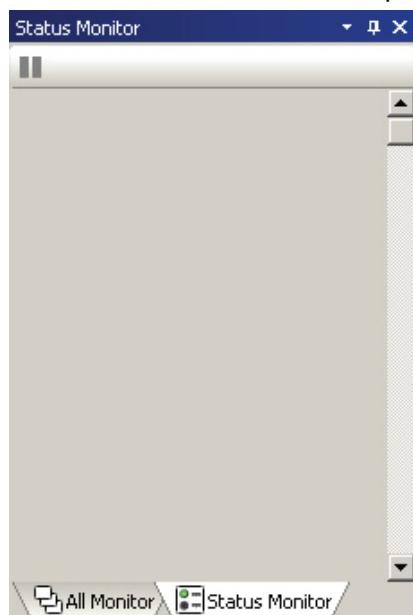


4.4.4 Status Monitor

Status Monitors provide information on the operation status of the drive. When the drive is first connected, the Status Monitor window is automatically opened.

Project Closed

When the Status Monitor is first opened, it will appear blank:



Status Monitor Window (Drive Offline)

Drive Online

When the drive is connected, DriveWizard Plus will display the following window.



Status Monitor Window (Drive Online)

Project Open

If the connection with the drive is suddenly interrupted, the Status Monitor window will appear as follows:



Status Monitor Screen (Drive Connection Interrupted)

Main Screen Display

Status Monitor automatically displays all monitor items. Monitor numbers and names appear along side an LED-type of display:



Monitor Start/Stop

Clicking ("Monitor Start/Stop") will freeze the monitors at their current values. Click again to update the monitors with data from the drive.

4.4.5 Movement Monitor

Movement Monitor displays the data selected in the Monitor Setting dialog box.

Project Closed

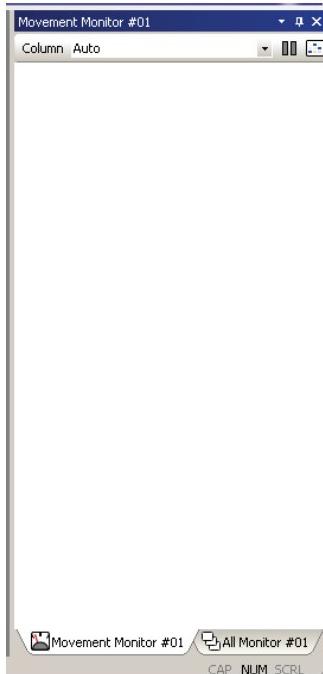
When a Project is first opened but no drive is connected, the Movement Monitor will appear blank:



Movement Monitor Screen (Drive Offline)

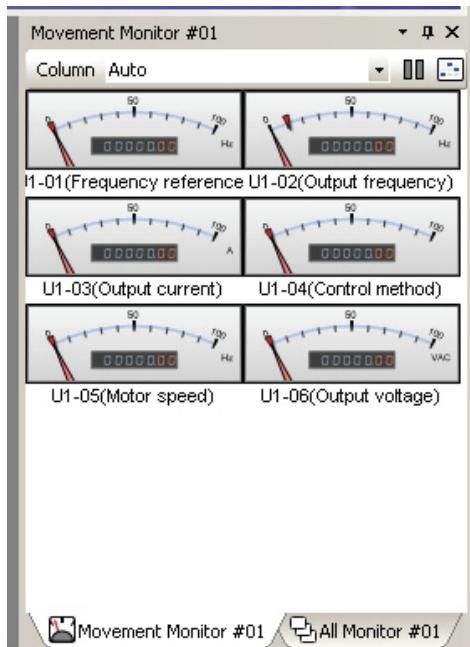
When Drive is Online

When the drive is first connected, the Movement Monitor window will appear blank:



Movement Monitor Screen (Drive Online)

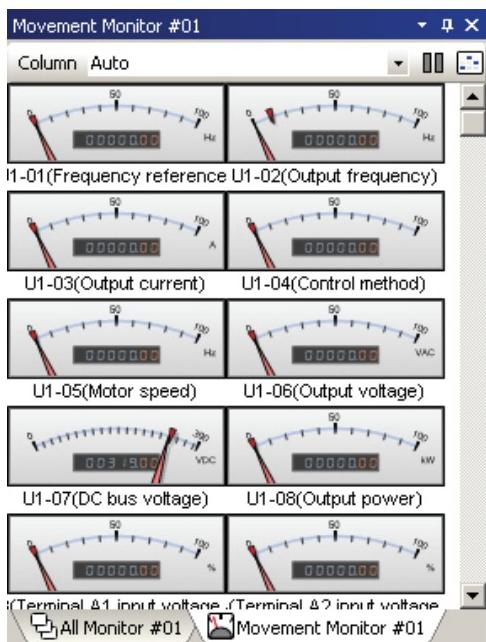
As monitor items are added, the Movement Monitor window will appear like this:



Movement Monitor Screen (Drive Online, Monitors Items Added)

Drive Connected and Project Opened

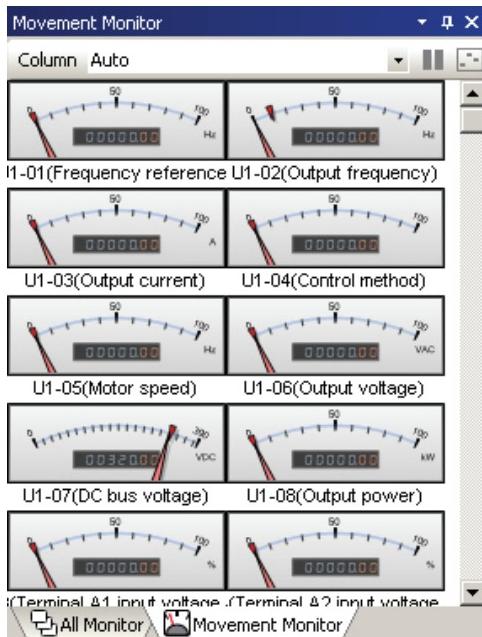
When the drive is connected and a Project is already opened, the monitor items that were already saved to the Project will automatically appear:



Movement Monitor Screen (Drive Online and Project Open)

Project Open

If the drive connection is suddenly interrupted, the Movement Monitor will appear as follows:

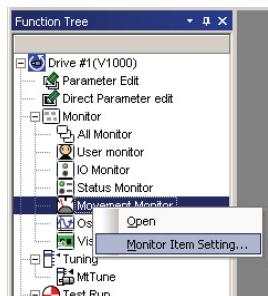


Movement Monitor Screen (Drive Connection Interrupted)

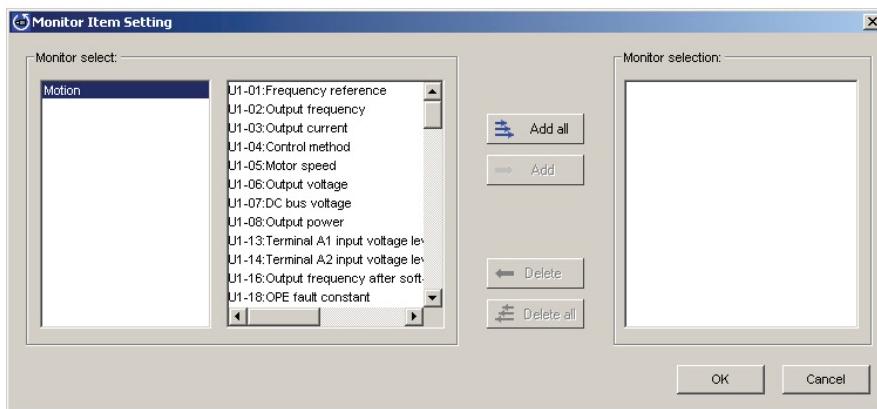
Main Screen Display

To display monitor items in the Movement Monitor window, follow the instructions below. Each item selected will appear in the Movement Monitor with the monitor name, item, and a graphic meter display.

- 1) Right-click on "Movement Monitor" in the function tree. The following pop-up menu will appear:

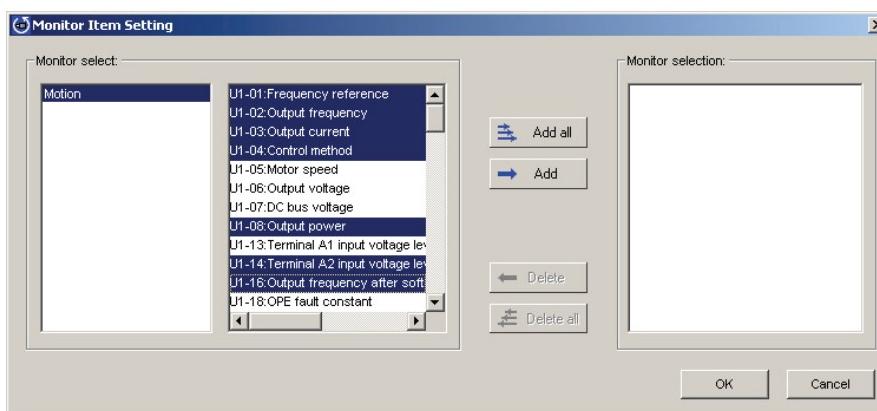


- 2) Select "Open Monitor Item Setting" to generate the following window:

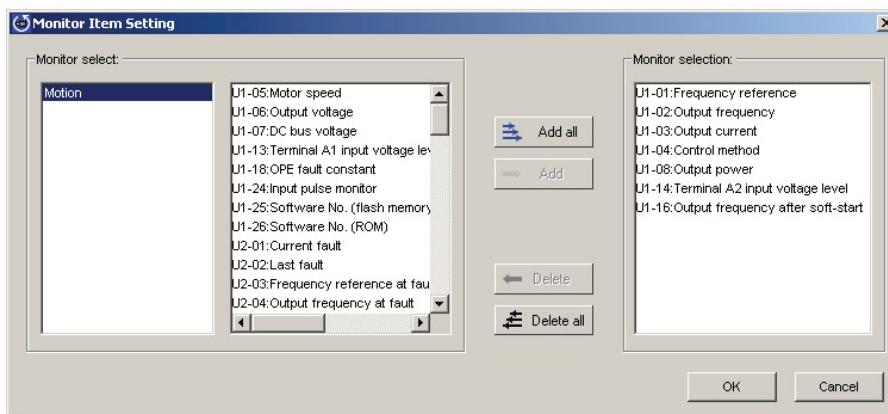


3) Select the items you would like to appear in the Movement Monitor window.

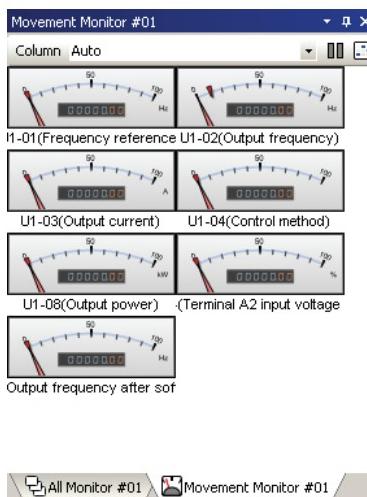
NOTE: Parameter categories that set monitor items do not need to be selected.



4) Click "Add".

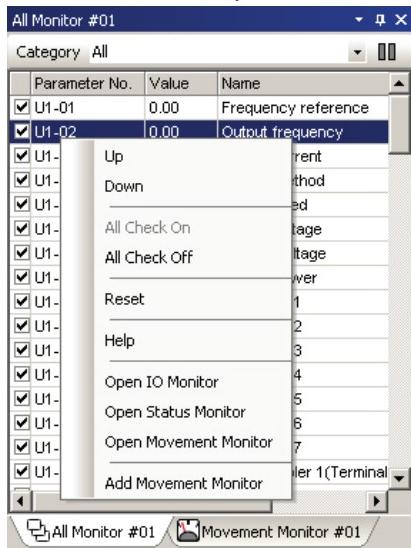


5) Click "OK" and the selected items will now appear in the Movement Monitor window.



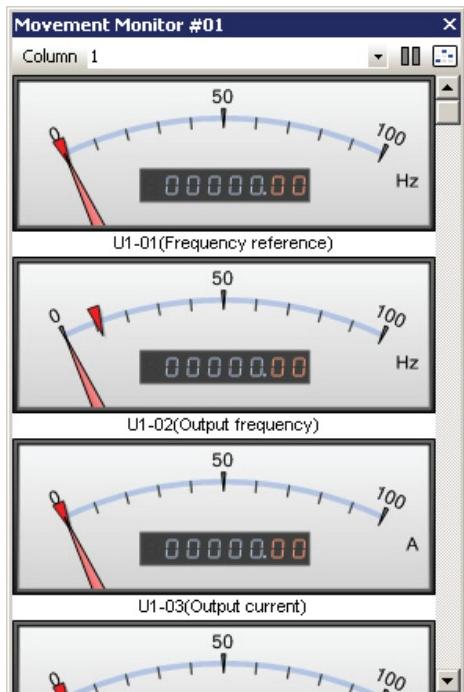
All Monitor #01 Movement Monitor #01

You can also double-click on the Movement Monitor window to select items to add. Right-clicking on "All Monitors" or "User Monitors" will generate a pop-up window that lets you add that monitor to the Movement Monitor window. When the row selected is not part of the Movement Monitor, the pop-up menu will offer the option to disable the monitor.

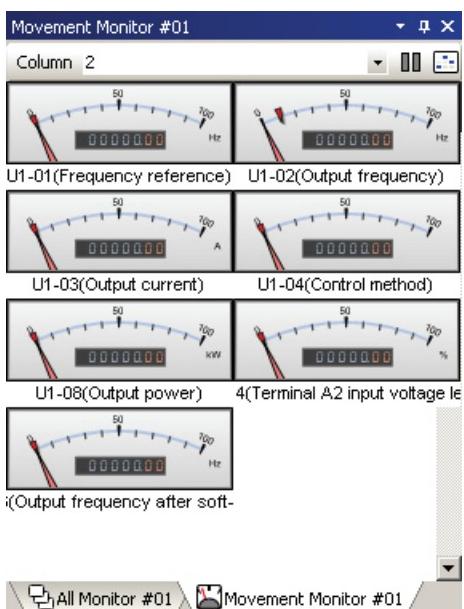


Arranging the Operation Status Display into Columns

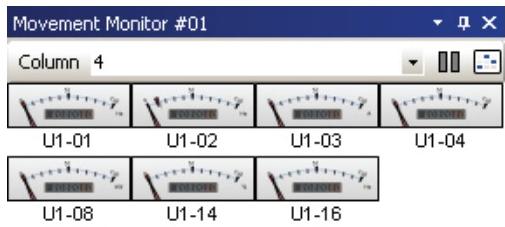
A drop-down menu lets you arrange the Operation Status meters into a single column or multiple columns.



Single-column display



Double-column display



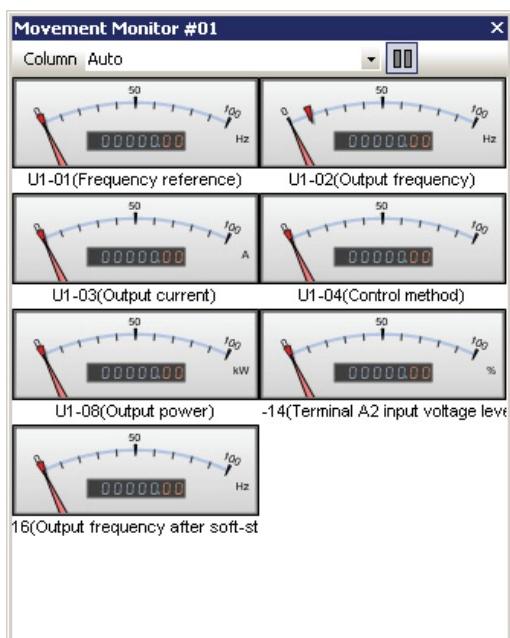
Four-column display

Resize

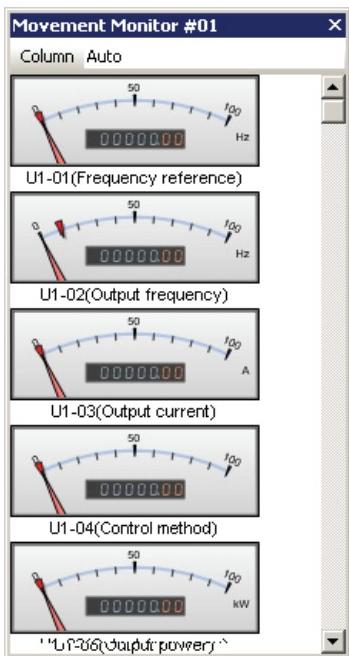
The size of the Movement Monitor window will change depending on how many columns have been selected.

Automatically Arrange Monitors

This automatically sets the size of the meter display to fit inside the window.



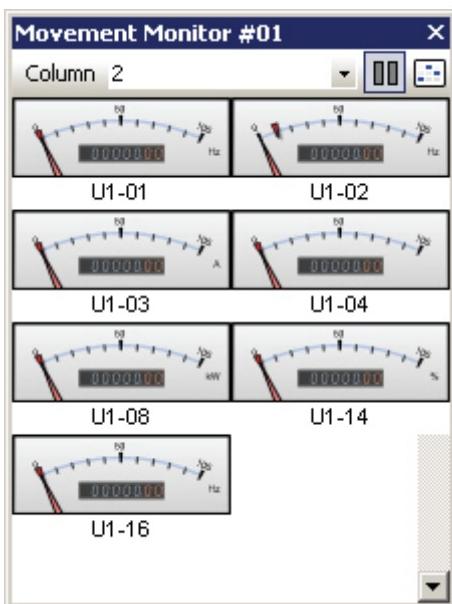
Before Resizing (Number of Columns Set Automatically)



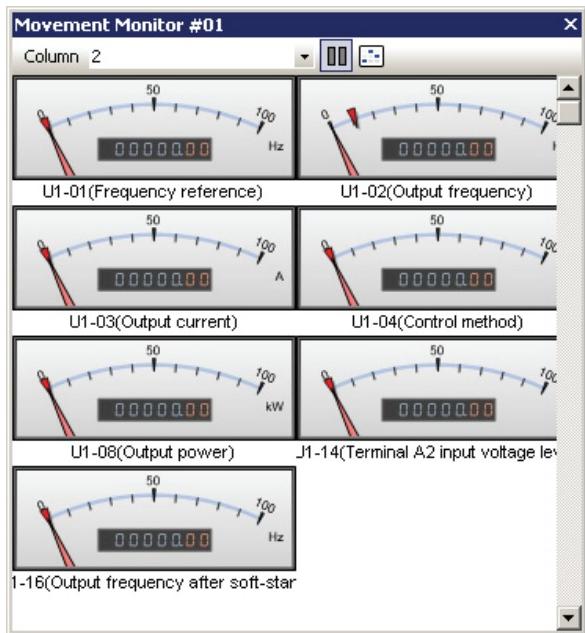
After Resizing (Number of Columns Set Automatically)

Adjusting the window size with a fixed number of columns

You can adjust the size of the meters by enlarging or shrinking the window where they appear. Here, the number of columns displayed will remain the same as the size of the window changes.



Before Resizing (Number of Columns Fixed)



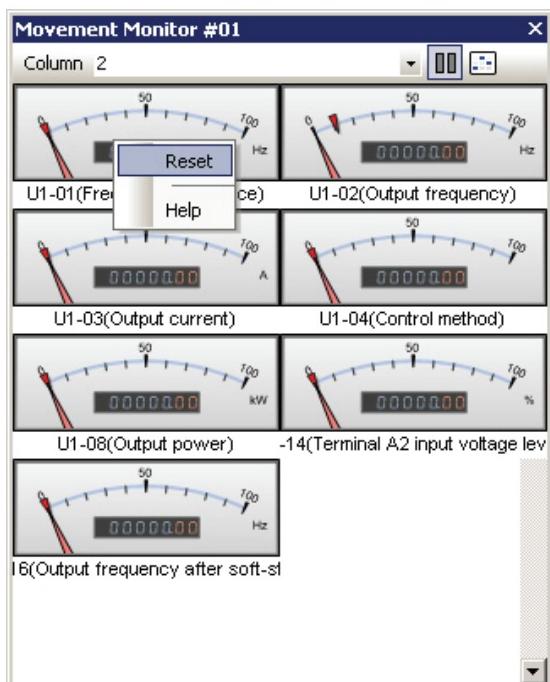
After Resizing (Number of Columns Fixed)

Monitor Start/Stop

Clicking ("Monitor Start/Stop") will freeze the monitors at their current values. Click again to update the monitors with data from the drive.

Resetting the maximum value

Right-clicking on the Movement Monitor window will produce a pop-up menu. You can reset the maximum value displayed by selecting Reset in this menu.



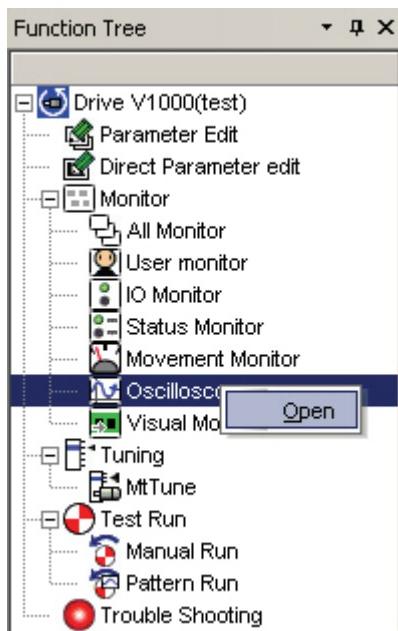
4.4.6 Oscilloscope

The oscilloscope function lets the user view and measure changes to various aspects of drive and motor performance over time.

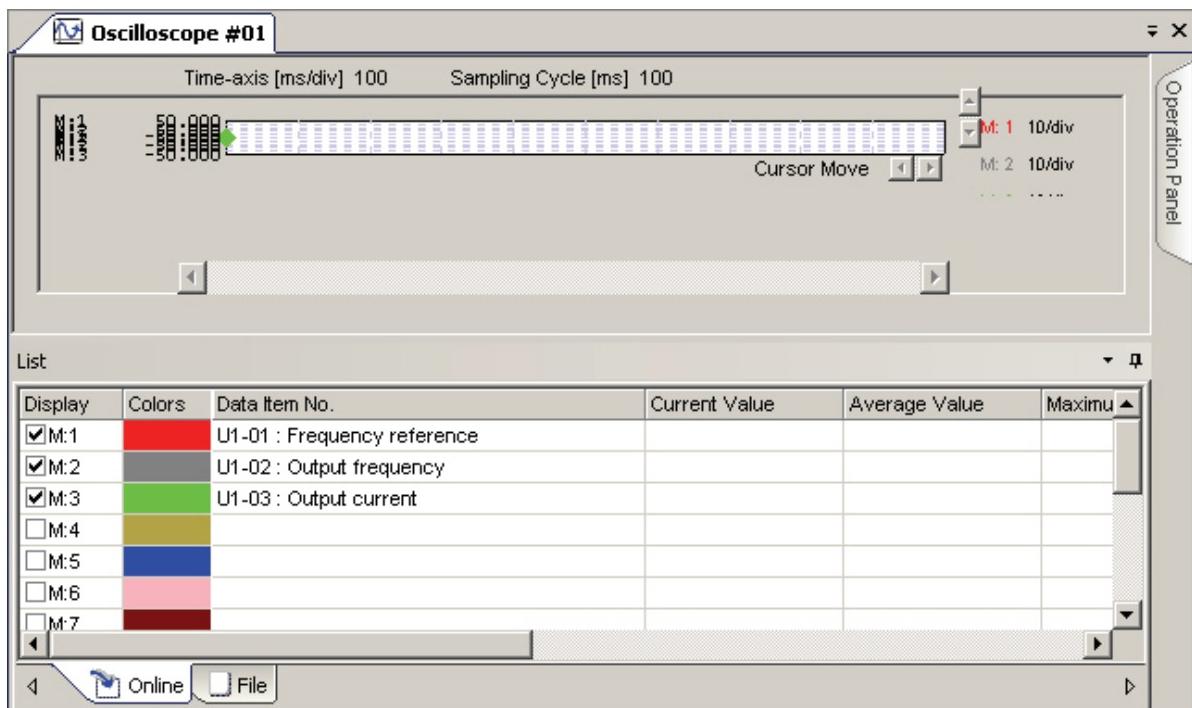
Main Screen Display

To activate the Oscilloscope from the main screen, follow the instructions below.

- 1) Right-click on the Oscilloscope in the Function Tree and select Open from the pop-up menu.

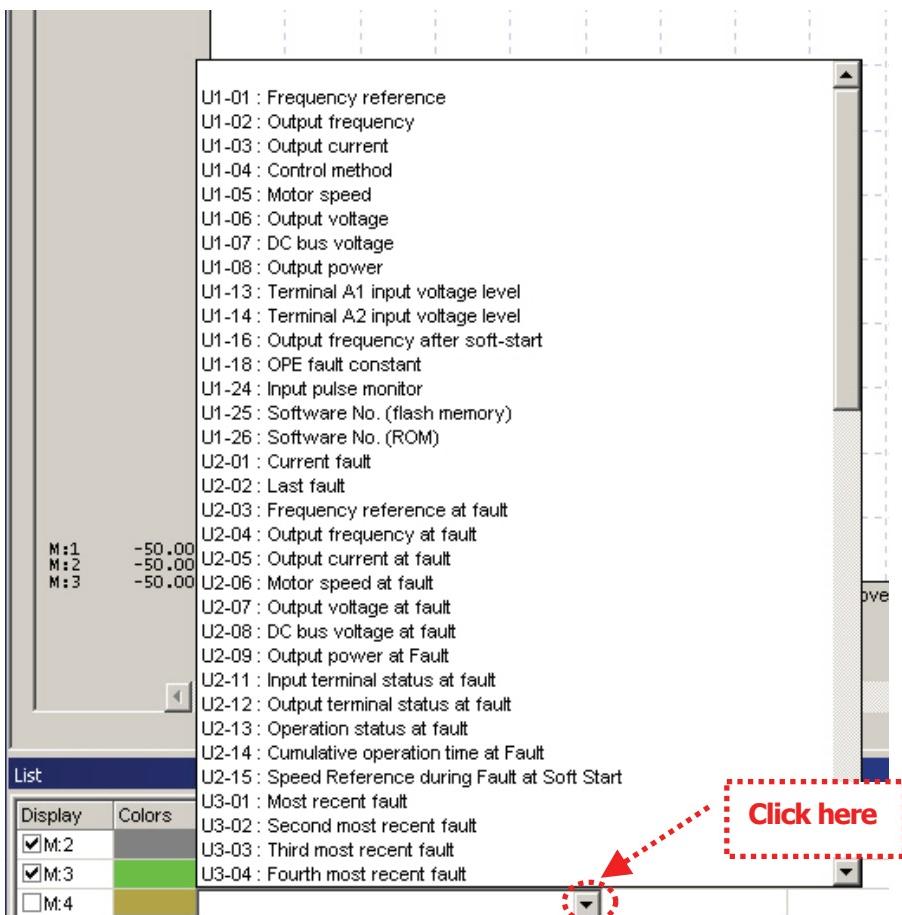


- 2) If the drive is online, the following window will appear:



Starting and stopping the monitor

- Click on the bottom of the window and select the desired monitor from the pop-up window.
NOTE: If the desired parameter is already part of the default display, then this step is not necessary.



- From the display column, check the desired monitor item "MN(N = 1 - 16)".

Display	Colors	Data Item No.	Current Value	Average Va
<input checked="" type="checkbox"/> M:1	Red	U1-01 : Frequency reference		
<input checked="" type="checkbox"/> M:2	Grey	U1-02 : Output frequency		
<input checked="" type="checkbox"/> M:3	Green	U1-03 : Output current		
<input type="checkbox"/> M:4	Yellow			

- Monitors can be started either by selecting Monitor (M) from the Main Menu, or by clicking the monitor start button on the operation panel.



Starting from the Main Menu

Using the Toolbar

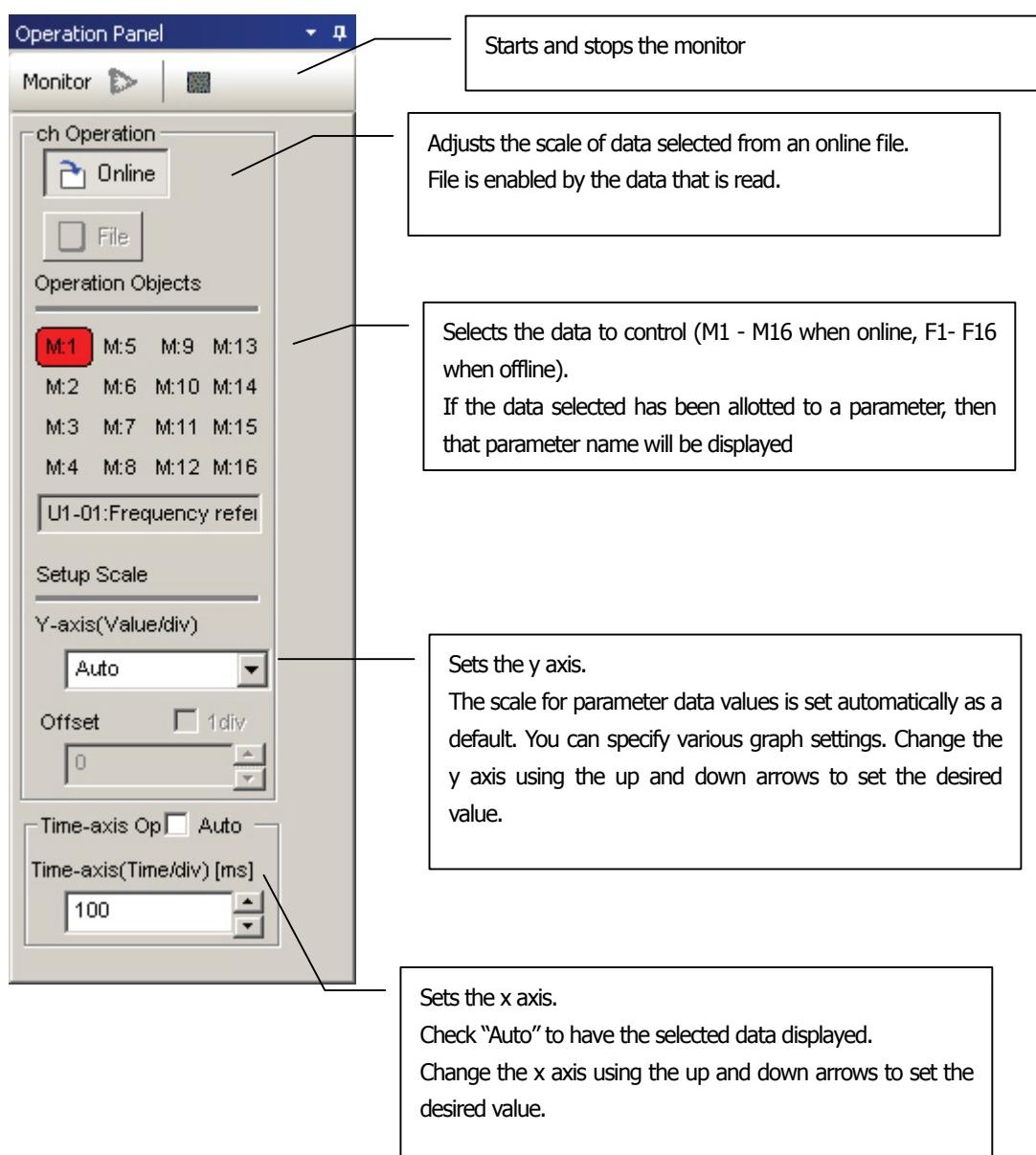
Using the operation panel

- 4) Monitors can be stopped either by selecting Monitor (M) from the Main Menu, the toolbar, or the operation panel.



Operation Panel

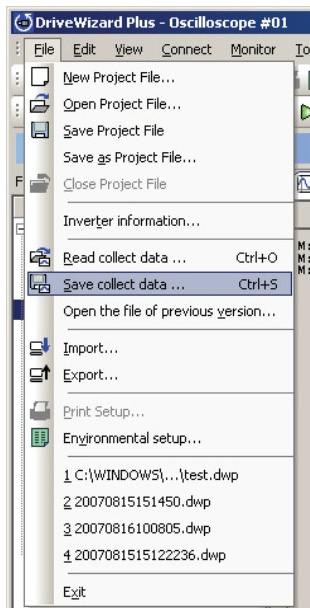
Clicking the “Operation Panel” tab on the right side of the window will generate the following window:



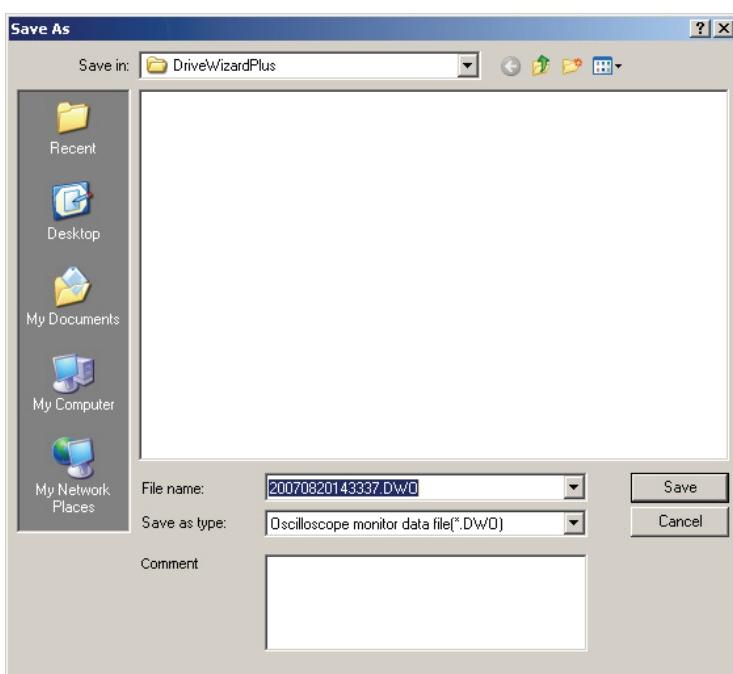
Saving and reading the data collected

Saving data

- 1) Start the monitor and collect the desired data. Stop the monitor when finished.
- 2) Next select “Save collect data” from the File (F) menu, or click  on the toolbar.



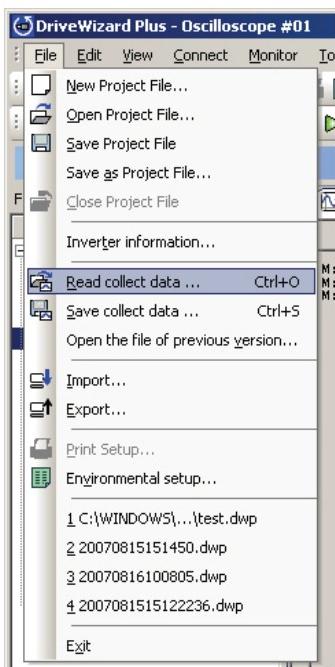
- 3) The save dialog box will appear. Enter a file name.



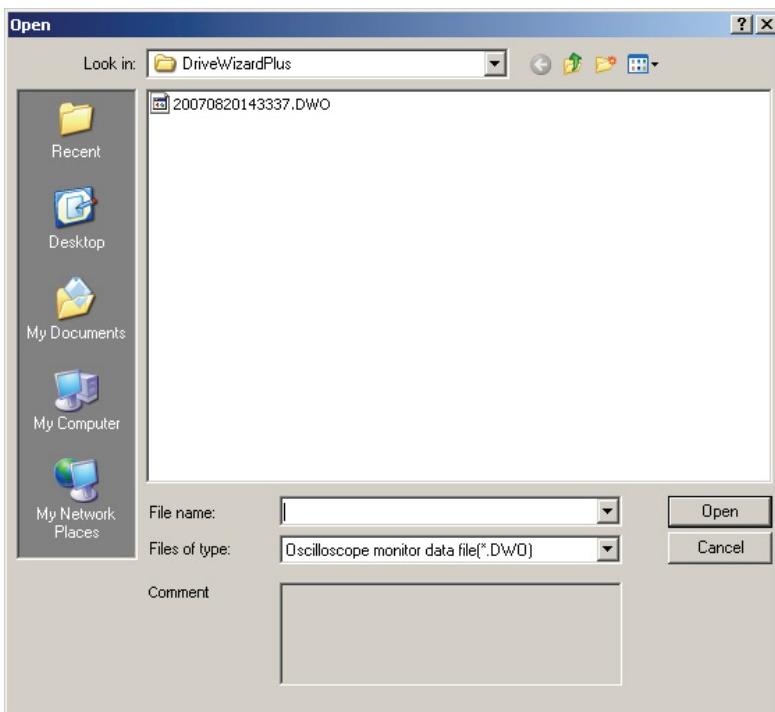
- 4) Click “Save” to save the data.

Reading data that has already been saved

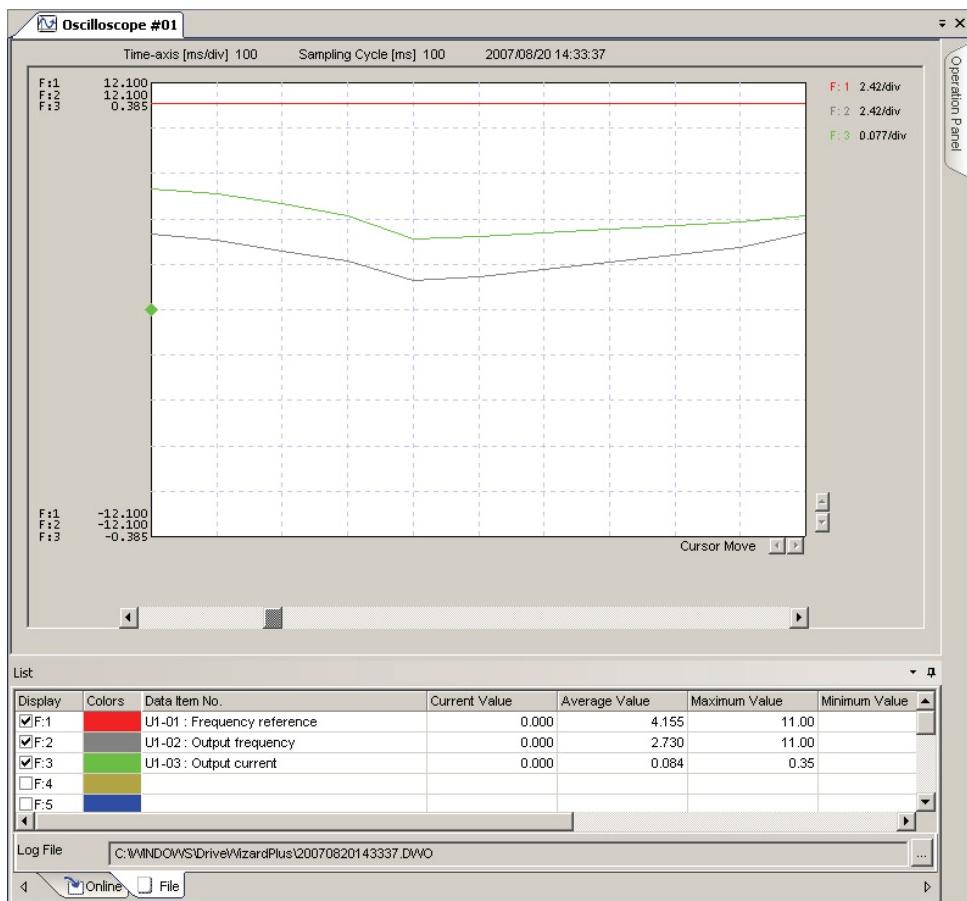
- 1) From “File (F)”, select “Read collect data” You can also click  on the toolbar.



- 2) The following dialog box will appear. Select the desired file and click “Open”.

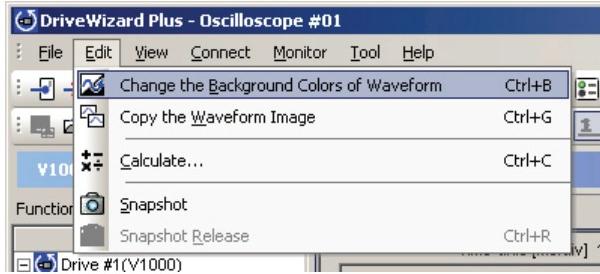


- 3) The file name appears on the list display, and the data read from the file will appear in the graph.

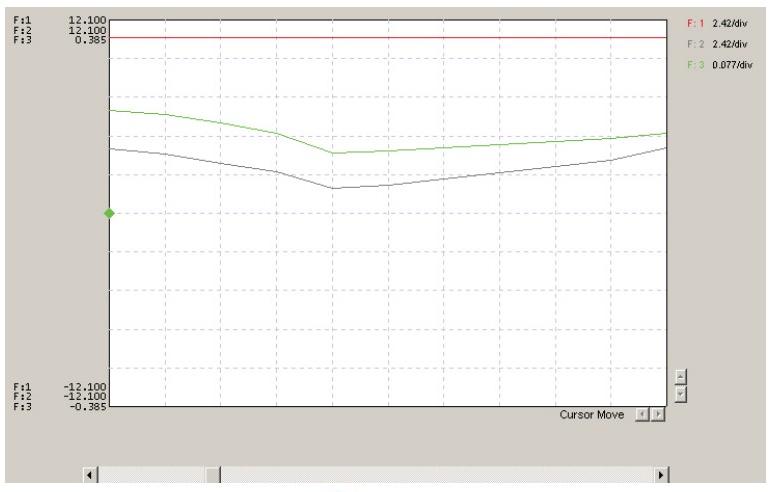


Switching Waveform Background Color

- 1) Change the background color for the waveform by going to Edit (E) in the Main Menu or by clicking on .

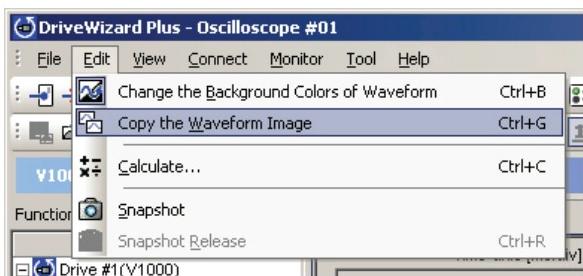


Background color can be set to black or to white.

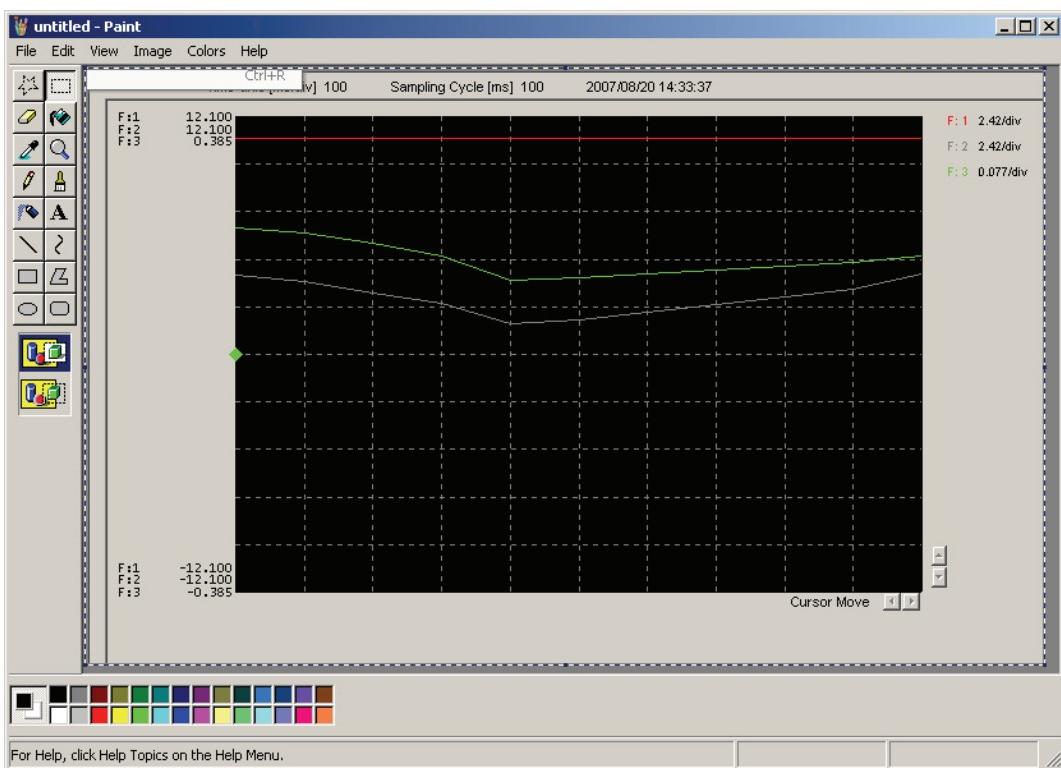


Waveform Image Copy

- 1) Go to Edit (E) in the Main Menu and select “Copy the Waveform Image”, or click  in the Toolbar.



- 2) You can then paste the picture into Microsoft® Paint or another graphics editor.

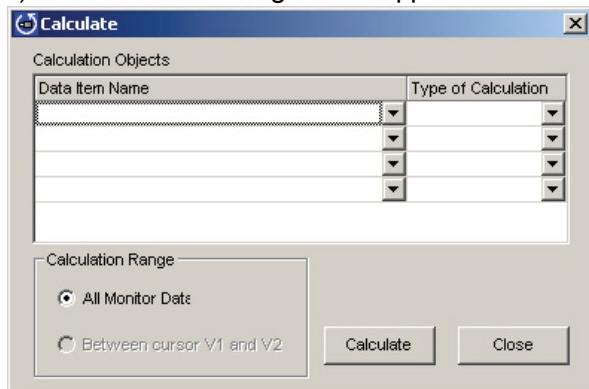


Data Calculation Functions

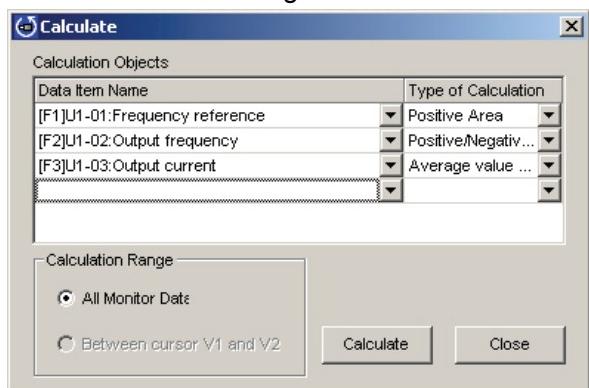
- 1) Go to the Edit (E) menu and select "Calculate". You can also click on  in the Toolbar.



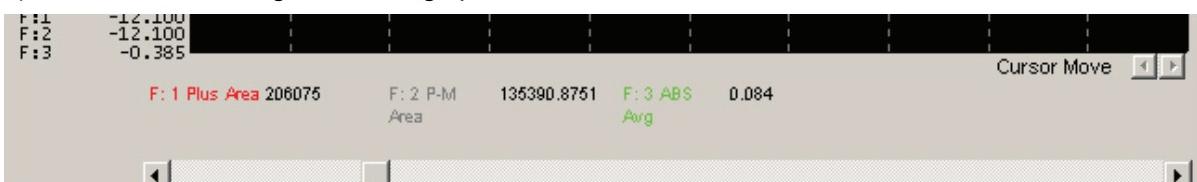
- 2) The Calculate dialog box will appear.



- 3) Use the drop-down menu to select the parameter in the Data column, and then the type of calculations on the right.



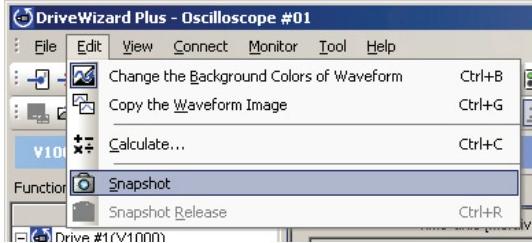
- 4) Click "Calculate" to generate the graph as shown below.



NOTE: Use the cursor to have DriveWizard Plus calculate values within a specified range in the graph.

Taking and Clearing a Snapshot

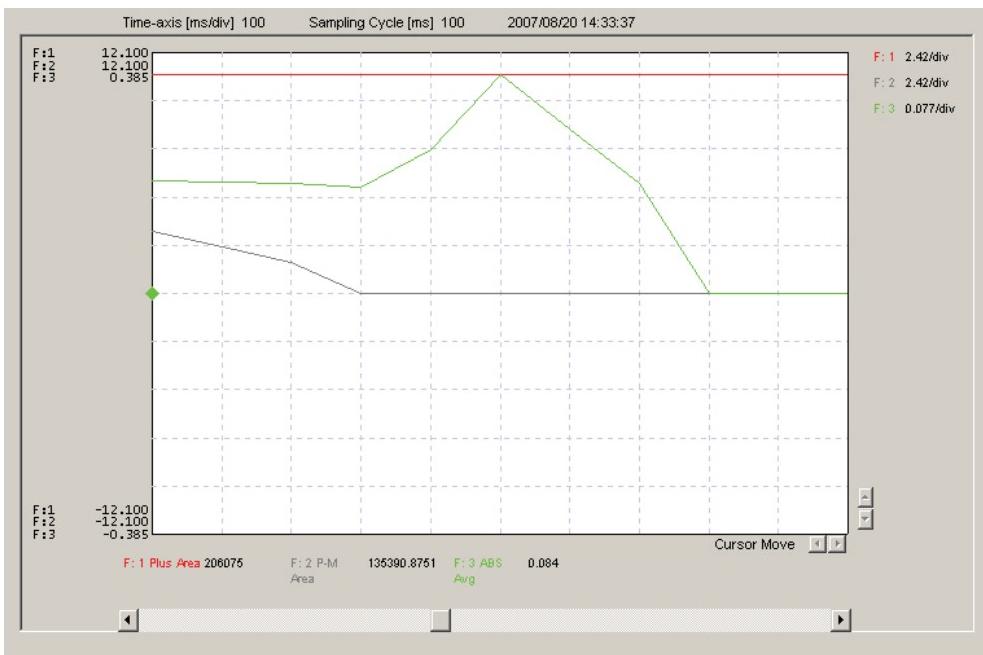
- 1) Go to Edit in the Main Menu and select "Snapshot". You can also click on  in the Toolbar.



- 2) The portion of the graphs taken with the Snapshot function will appear in gray.



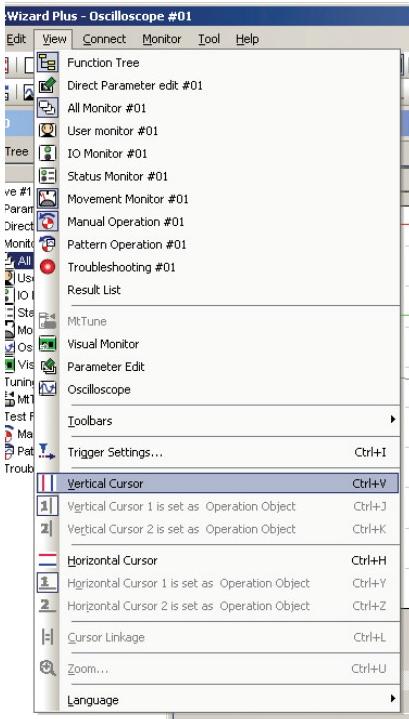
- 3) To clear the Snapshot data, go the Edit menu and select Snapshot Release, or click  on the Toolbar.



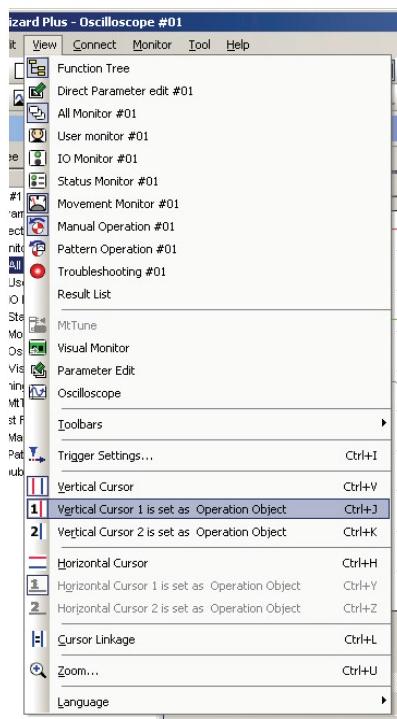
Cursor Display

Using the vertical cursor

- 1) Go to the View (V) menu and select Vertical Cursor (V) or click on  in the toolbar.



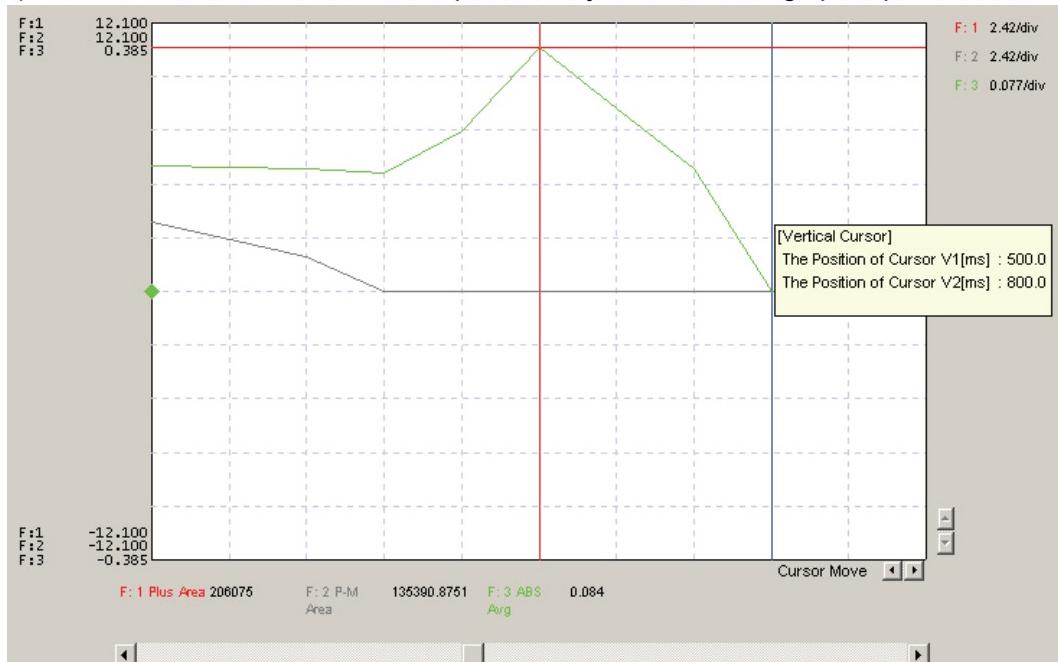
- 2) Set the cursor by selecting "Vertical Cursor 1 is set as Operation Object" from the View (V) menu shown below.



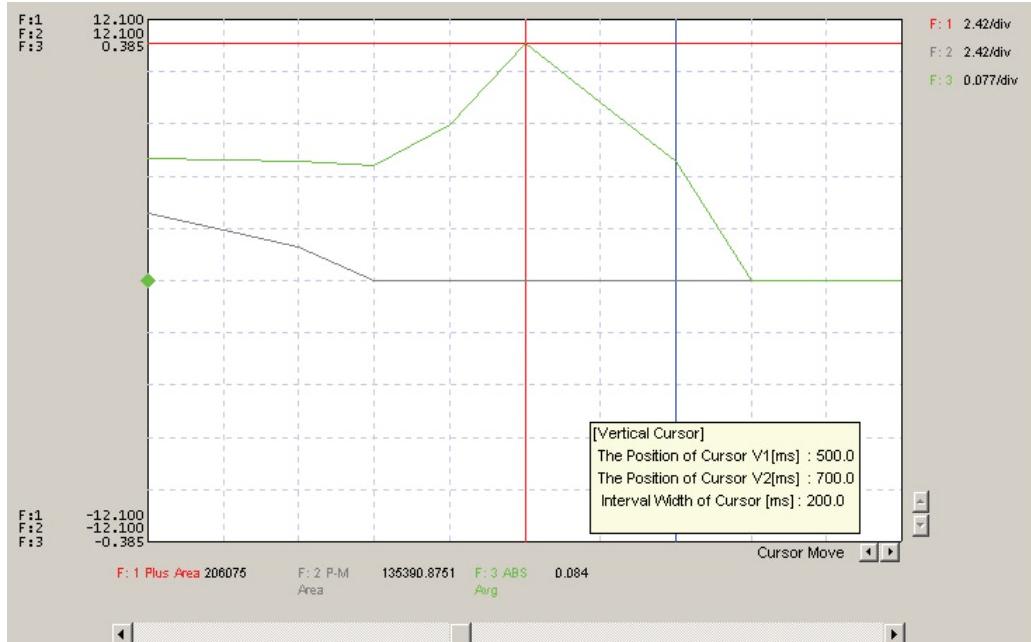
- 3) After selecting, “Vertical Cursor 1 is set as Operation Object”, click on the graph to position the cursor.



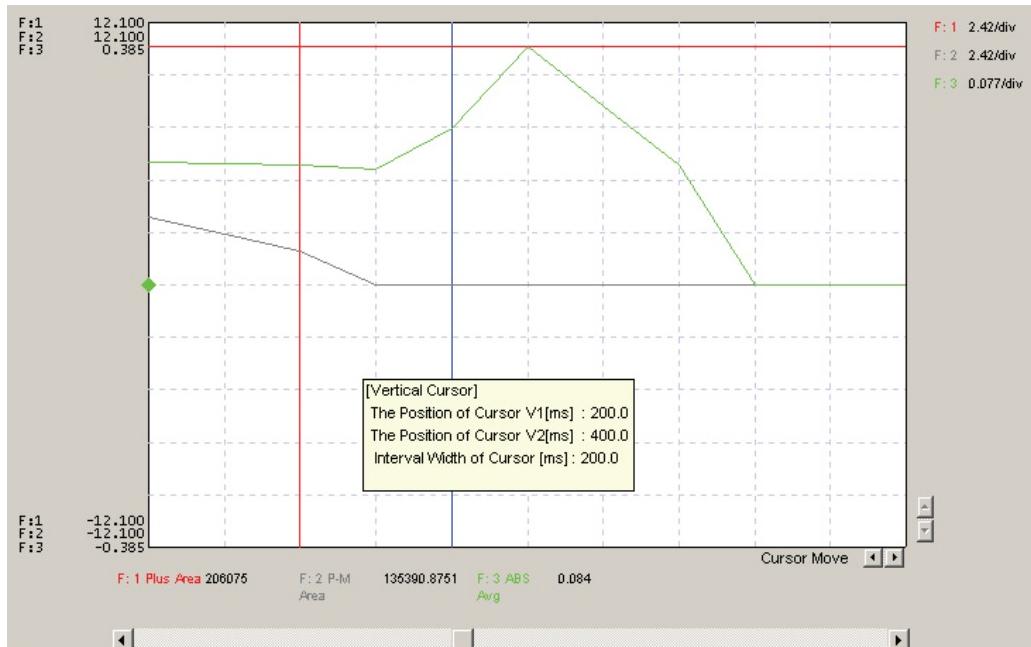
- 4) Select “Vertical Cursor 2 is set as Operation Object”, click on the graph to place the next cursor.



- 5) You can now use the mouse to move the cursors. Data within the cursor will appear along side the graph.

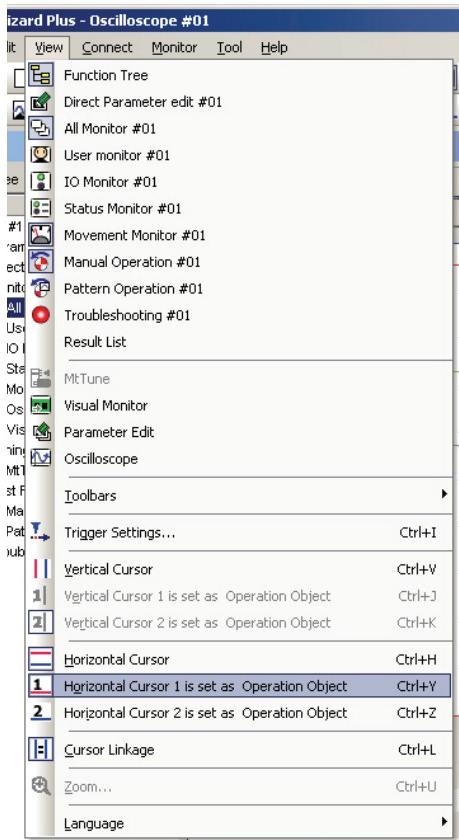


- 6) Move the cursor by selecting “Cursor Linkage (C)” from the View (V) menu and then adjusting the space between both cursors using the mouse.

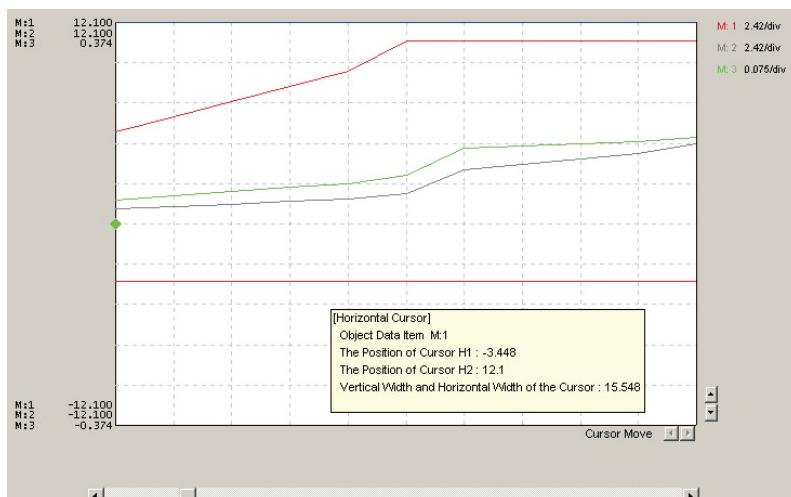


Using the horizontal cursor

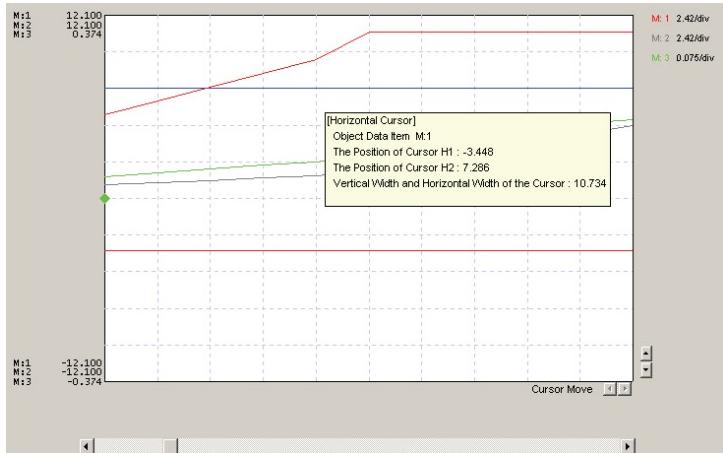
- 1) Go to the View (V) menu and select Horizontal Cursor (H) or click on  in the toolbar.



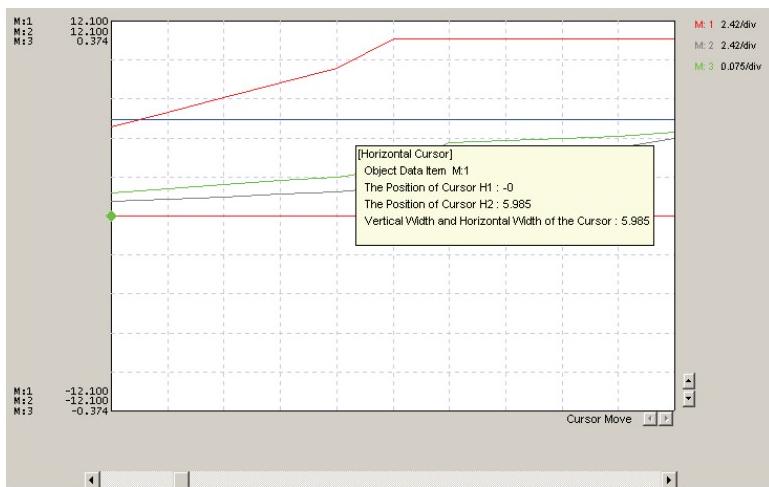
- 2) Set the cursor by selecting "Horizontal Cursor 1 is set as Operation Object" and "Horizontal Cursor 2 is set as Operation Object" from the View (V) menu shown below.
- 3) After selecting, "Horizontal Cursor 1 is set as Operation Object", click on the graph to position the cursor.



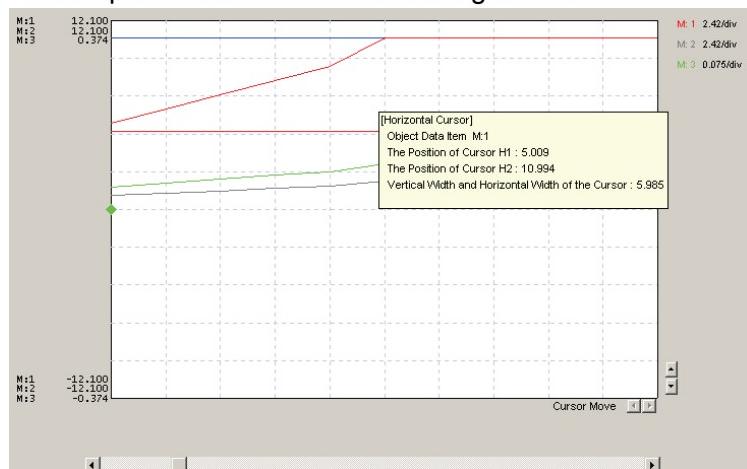
- 4) Select “Horizontal Cursor 2 is set as Operation Object”, and click on the graph to place the next cursor.



- 5) You can now use the mouse to move the cursors. Data within the cursor will appear along side the graph.

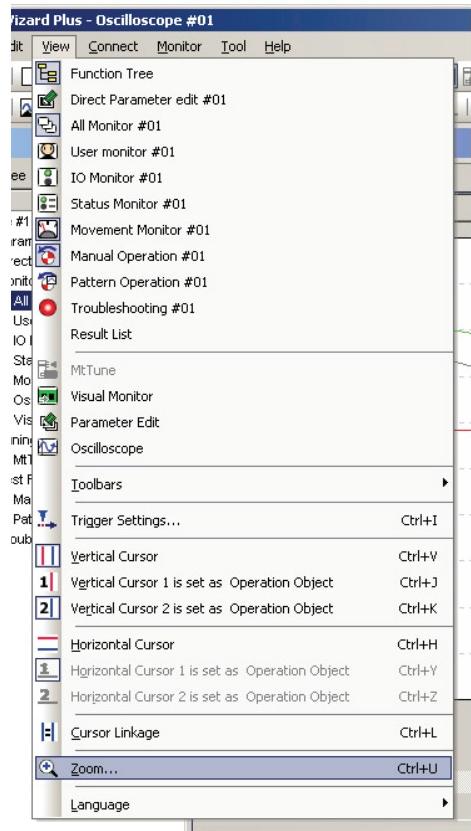


- 6) Move the cursor by selecting “Cursor Linkage (C)” from the View (V) menu and then adjusting the space between both cursors using the mouse.

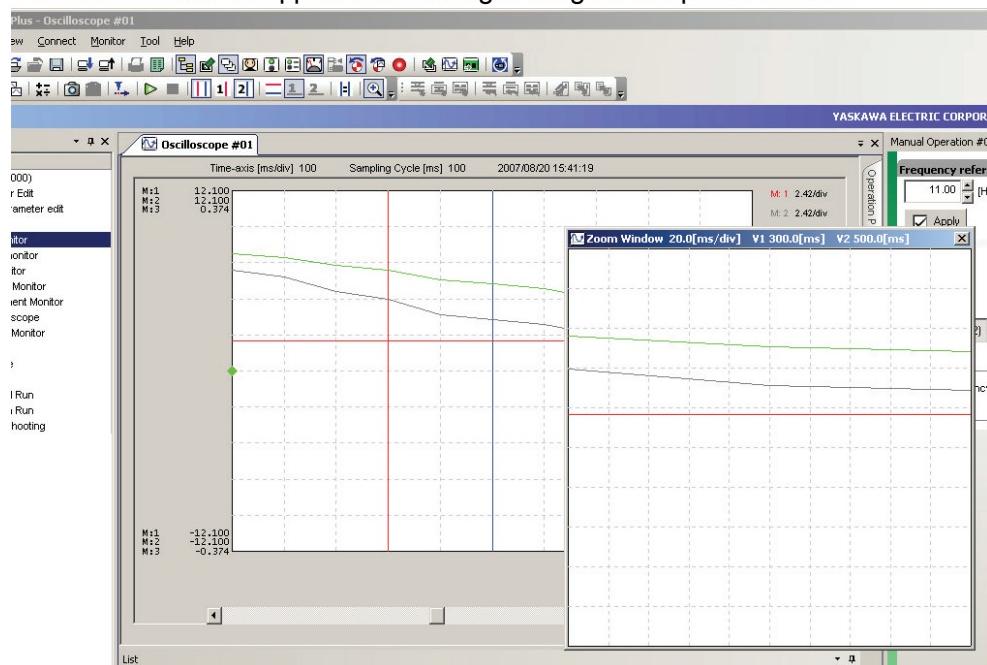


Zoom

You can enlarge the area between the two vertical cursors either by clicking on  in the toolbar or by selecting Zoom (Z) from the View (V) menu.



The area selected will appear as an enlarged image in a separate window.

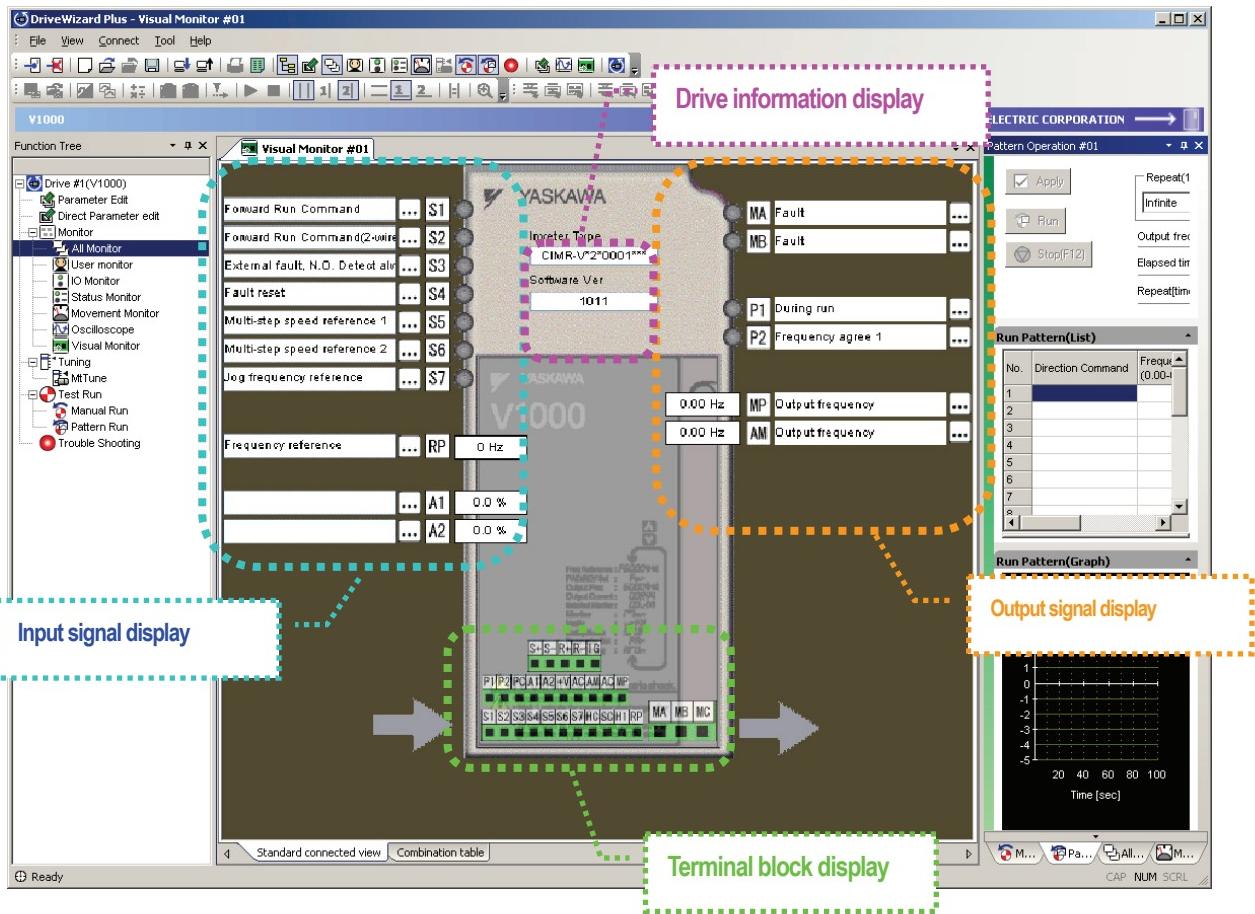


4.4.7 Visual Monitor

The Visual Monitor provides a visual display of the drive operation status and current settings. The image will appear much like a standard wiring diagram.

4.4.7.1 Standard Connection Diagram

The screenshot below indicates the various display features of the Visual Monitor.



- **Drive Data Display**

Displays data on the drive that is currently connected.

- **Input Signal Display**

Displays data for the drive's input terminals.

- **Output Signal Display**

Displays data for the drive's output terminals.

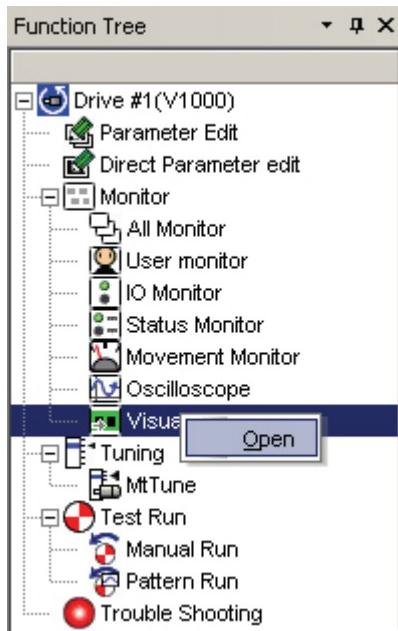
- **Terminal Block Display Range**

Displays data for the terminal block settings in the drive.

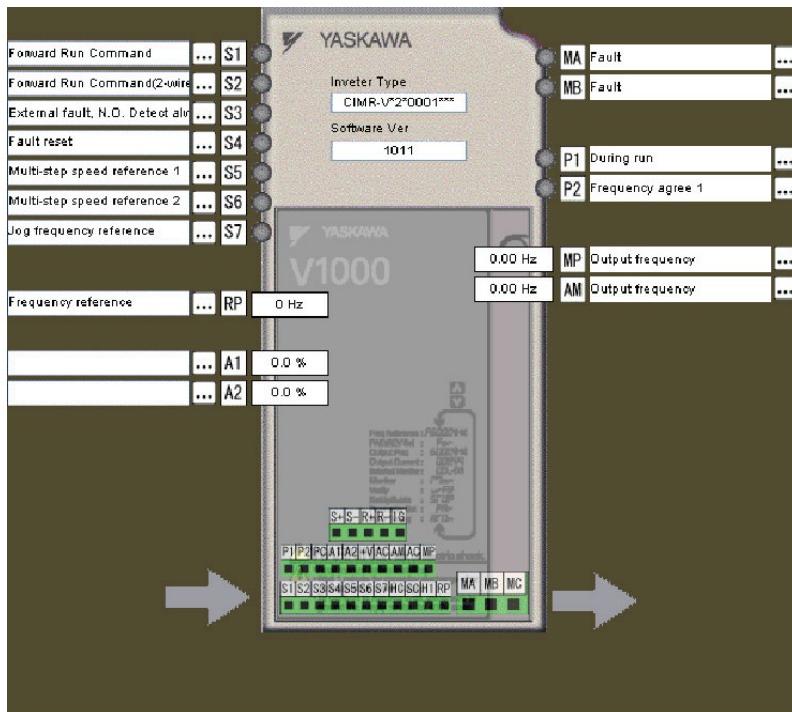
Standard Connection Diagram Screen Display

To display the connection diagram using the Visual Monitor Function, follow the instructions below:

- 1) Right-click on the Visual Monitor icon in the Function Tree to generate the pop-up menu shown below.



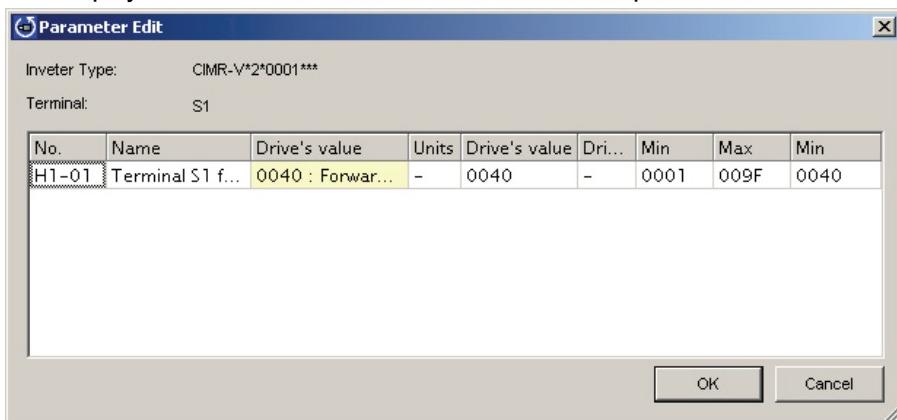
- 2) Selecting "Open" will produce the window below:



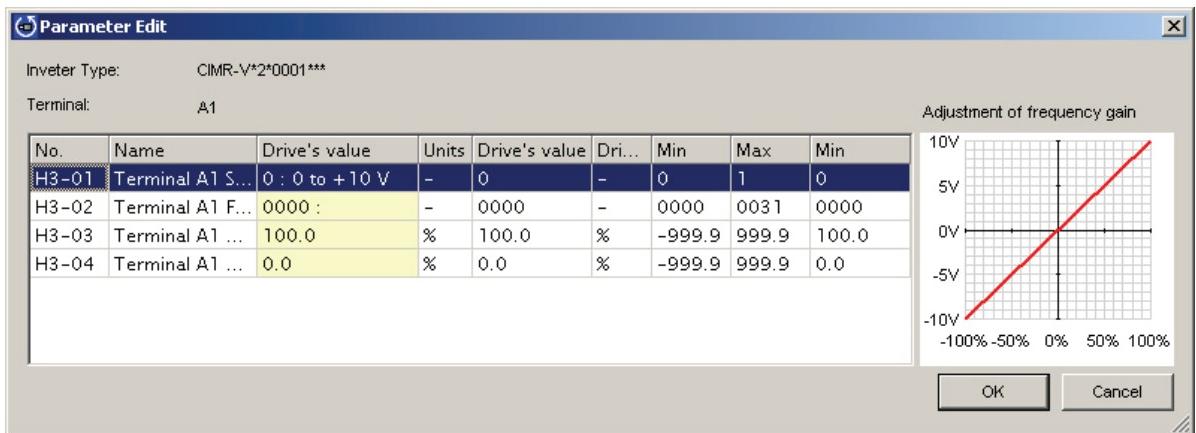
Parameter Edit Screen Display

There are three ways to go to the Parameter Edit window from the Standard Connection Diagram. The Parameter Edit Screen is displayed by clicking on **...**.

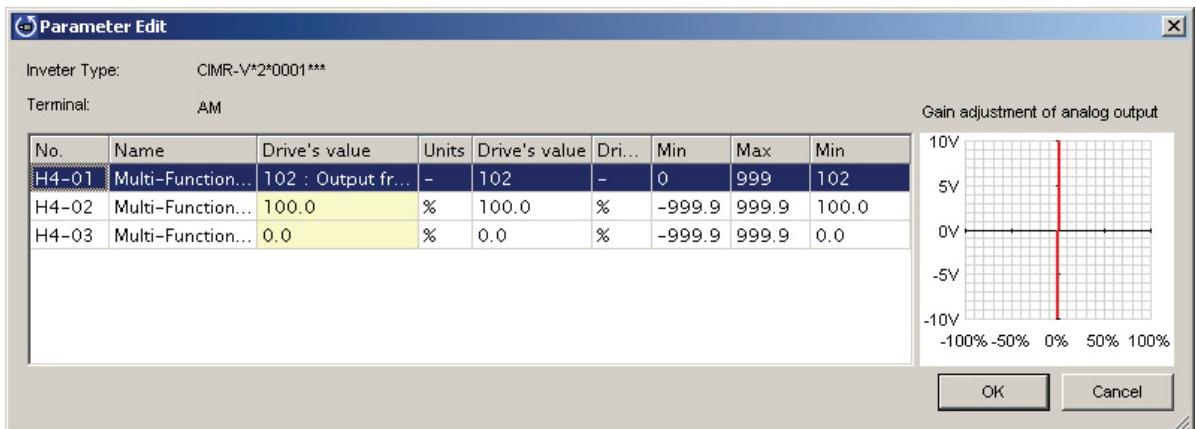
- Display the Parameter Edit window from the bit I/O parameter.



- Display the Parameter Edit window from the Analog Input Parameter.



- Display the Parameter Edit window from the Analog Output Parameter.



4.4.7.2 Terminal Combination for Speed Selection Window

Features of the Terminal Combination for Speed Selection Window appear below:

The screenshot shows a table titled "State of input of multifunctional input terminal". The columns are labeled: Multi-step Speed1, Multi-step Speed2, Multi-step Speed3, Multi-step Speed4, JOG frequency, Parameters, and Frequency Reference. The rows show various combinations of ON and OFF states for the four speed inputs. The "Parameters" column lists specific instructions corresponding to each row. A red dashed box highlights the entry for "b1-01=1" in the "Parameters" column. A blue dashed box highlights the entire row where the first speed input is ON and the second is OFF, with the status "H3-05 != 2 , H3" in the "Frequency Reference" column.

State of input of multifunctional input terminal						
Multi-step Speed1	Multi-step Speed2	Multi-step Speed3	Multi-step Speed4	JOG frequency	Parameters	Frequency Reference
OFF	OFF	OFF	OFF	OFF	b1-01=0 b1-01=1 b1-01=2 b1-01=3 b1-01=4	Instruction from d1-01 Instruction from terminal... Instruction from MEMO... Instruction from option ...
ON	OFF	OFF	OFF	OFF	H3-05 != 2 , H3 H3-05 != 2 , H3	
OFF	ON	OFF	OFF	OFF	H3-05=2 , H3-09 != 2 H3-05 != 3 , H3-09 != 3 H3-05 != 3 , H3-09 != 3 H3-05=3 , H3-09 != 3	Instruction from terminal... Instruction from d1-03 Instruction from terminal... Instruction from terminal...
ON	ON	OFF	OFF	OFF	-	Instruction from d1-04
OFF	OFF	ON	OFF	OFF	-	Instruction from d1-05
ON	OFF	ON	OFF	OFF	-	Instruction from d1-06
OFF	ON	ON	OFF	OFF	-	Instruction from d1-07
ON	ON	ON	OFF	OFF	-	Instruction from d1-08
OFF	OFF	OFF	ON	OFF	-	Instruction from d1-09
ON	OFF	OFF	ON	OFF	-	Instruction from d1-10
OFF	ON	OFF	ON	OFF	-	Instruction from d1-11
ON	ON	OFF	ON	OFF	-	Instruction from d1-12
OFF	OFF	ON	ON	OFF	-	Instruction from d1-13
ON	OFF	ON	ON	OFF	-	Instruction from d1-14
OFF	ON	ON	ON	OFF	-	Instruction from d1-15
ON	ON	ON	ON	OFF	-	Instruction from d1-16
OFF	OFF	OFF	OFF	ON	-	Instruction from d1-17

At the bottom of the window, there are two tabs: "Standard connected view" and "Combination table". The "Combination table" tab is highlighted with a blue dashed box. A red dashed box highlights the status "Status of currently selected value" in the "Parameters" column of the table.

Displaying the Terminal Combination for Speed Selection Window

To call up the Terminal Combination for Speed Selection Window using the Visual Monitor, open the Visual Monitor, then select the tab at the bottom of the window marked "Combination Table"



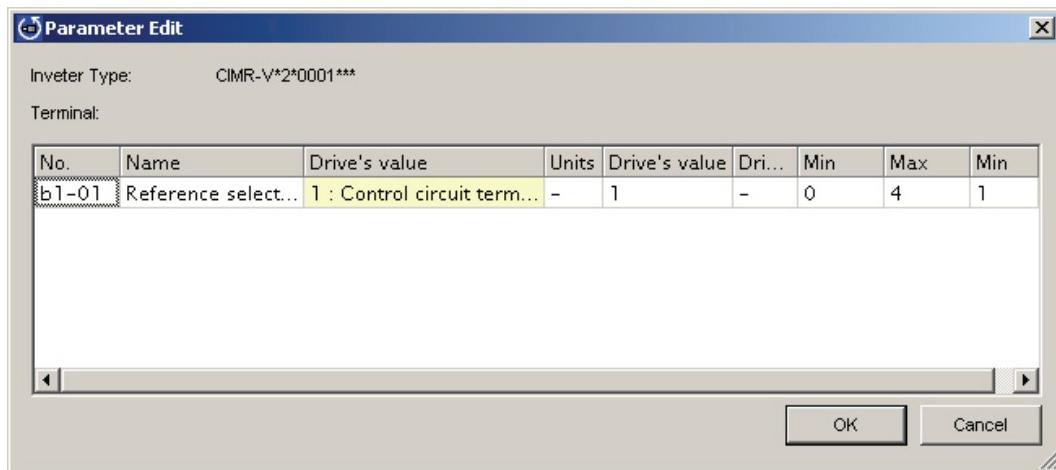
Displaying the Parameter Edit Screen

Follow the procedure below to open the Parameter Edit window from the Combination table:

- 1) Double-click on one of the parameter settings.

Item...	Parameters	Frequency Reference
	b1-01=0	Instruction from d1-01
	b1-01=1	Instruction from terminal...
	b1-01=2	Instruction from MEMOB...
	b1-01=3	Instruction from option ...
	b1-01=4	Instruction from pulse r...
	H3-05 != 2 , H3-09 != 2	Instruction from d1-02
	H3-05 != 2 , H3-09=2	Instruction from terminal...

- 2) The Parameter Edit window will open as shown below.



4.5 Auto-Tuning for Drive and Motor Parameters

The Auto-Tuning function automatically sets motor parameters for optimum performance. The drive must be connected for DriveWizard Plus to perform Auto-Tuning, and certain information regarding the type of motor needs to be entered manually.

⚠WARNING

Proper precautions must be taken when performing Rotational Auto-Tuning.

Be sure to read the instruction manual thoroughly, paying particular attention to the following points:

- Make sure that the motor has been decoupled from the load when performing Rotational Auto-Tuning. The motor should also be properly installed to a secure base. Any motor keys or other loose parts should be removed from the area to prevent accidents that may result when the motor begins to rotate.
- Clear the area around the motor.

⚠WARNING

Proper precautions must be taken when performing Auto-Tuning for Energy Saving.

Read the instruction manual thoroughly, paying particular attention to the following points:

- Make sure that the motor has been decoupled from the load when performing Auto-Tuning for Energy Saving. The motor should also be properly installed to a secure base. Any motor keys or other loose parts should be removed from the area to prevent accidents that may result when the motor begins to rotate.
- Clear the area around the motor.

⚠WARNING

Although the motor does not rotate during Stationary Auto-Tuning, current still flows from the drive into the motor.

Be sure to read the instruction manual thoroughly, paying particular attention to the following points:

- Although the motor does not rotate during Stationary Auto-Tuning, current still flows from the drive into the motor. Refrain from touching the motor until the Auto-Tuning process is complete.
- A holding brake (if used) should not be closed during Stationary Auto-Tuning.
- Stationary Auto-Tuning collects motor data automatically, and requires that the load be set to no more than 50% of the rated load for the motor.

 **WARNING**

Although the motor does not rotate during Auto-Tuning for Resistance Between Lines, current still flows through from the drive into the motor.

Be sure to read the instruction manual thoroughly, paying particular attention to the following points:

- Although the motor does not rotate during Auto-Tuning for Resistance Between Lines, current still flows from the drive into the motor. Refrain from touching the motor until the Auto-Tuning process is complete.
- A holding brake (if used) should not be closed during Auto-Tuning for Resistance Between Lines.

 **WARNING**

Motor may have some features that the drive is not capable of measuring, and there may be times when the motor cannot be disconnected from the load to perform proper Auto-Tuning.

Note the following:

- Auto-Tuning may only help a little, but is still better than running without Auto-Tuning.
- Be sure to enter data from the motor test report or from the motor nameplate when using Open Loop Vector.
- If you cannot collect this data, operate the drive in V/f Control.

NOTE: Auto-Tuning is not possible if one of the external terminals is set to the baseblock command and that command is currently enabled.

4.5.1 Selecting the Right Type of Auto-Tuning Mode

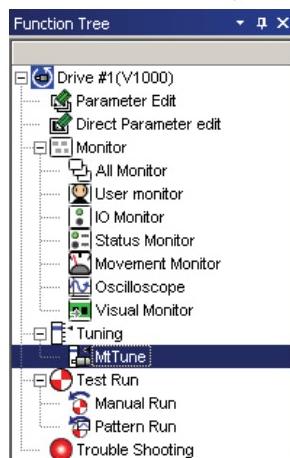
Follow the directions below to select the most appropriate type of Auto-Tuning:

- 1) Open the Auto-Tuning window.



There are three ways of opening the Auto-Tuning window:

- From the Main Menu
Menu → View (V) → “Mt Tune”
- From the toolbar
Click
- From the Function Tree
Double-click “Tuning” → “Mt Tune”



2) Select the type of Auto-Tuning.



NOTE: The types of Auto-Tuning available differ by control mode. Refer to the Technical Manual or Quick Start Guide for more information.

Types of Auto-Tuning

- Standard Tuning
Sets parameters related to motor characteristics by rotating the motor and taking various measurements. When using a motor with constant output characteristics or a high-performance motor, fully disconnect the load from the motor for Standard Tuning.
- Energy-Saving
Sets parameters related to motor characteristics by rotating the motor and taking various measurements, and prepares the drive for efficient performance. When using a motor with constant output characteristics or a high-performance motor, be absolutely sure to fully disconnect the load from the motor for Energy Saving Auto-Tuning.
- Tune-No Rotate 1
Sets parameters related to motor characteristics without rotating the motor. Perform Tune-No Rotate if the load cannot be disconnected from the motor for tuning purposes.
- Term Resistance
Adjusts parameter settings for the resistance between motor lines. Sends current into the motor coils without rotating the motor. For use when the cable between the drive and motor exceeds 50 m, or when the length of the motor cable has changed after proper Auto-Tuning has already been performed. Also useful for minimizing differences when the motor or drive capacity changes.

- Parameter Calculations

Parameter calculations require that motor-related data be entered either directly from the motor nameplate or from the motor test report. Frequency-related values must be entered in hertz. If online, only parameter calculations may be selected.

- Tune-No Rotate 2

The same as Tune-No Rotate 1. Perform this type of Auto-Tuning on a second motor if used (motor 2).

- PM Parameter

PM Motor Parameter Tuning requires that motor-related information from the motor's nameplate or from the test report be entered.

- Z Pulse

Z Pulse Offset Tuning calculates the Z pulse offset ($\Delta\theta$) if the PG encoder has been replaced.

- Inertia

Inertia Tuning adjusts parameters controlling the Feed Forward and the KEB Ride-Thru functions (L2-29 = 1 or H1-□□=7A/7B).

- ASR Gain

ASR Gain Auto-Tuning performs the same operation as Inertia Tuning, but also adjusts the ASR gain according to the response to the test signal.

The following table lists available Auto-Tuning selections and Control Modes.

Mode Drive Model	Control	V/f Control	V/f with PG	Open Loop Vector Control	Open Loop Vector Control 2	Closed Loop Vector Control	Closed Loop Vector Control for PM Motors	Advanced Open Loop Vector Control for PM	Closed Loop Vector Control for PM
VS mini J7	• Parameter Calculations	Selection not possible.	Selection not possible.	Selection not possible.	Selection not possible.	Selection not possible.	Selection not possible.	Selection not possible.	Selection not possible.
VS mini V7	• Parameter Calculations	• Parameter Calculations	Selection not possible.	Selection not possible.	Selection not possible.	Selection not possible.	Selection not possible.	Selection not possible.	Selection not possible.
VS-616 G5	Selection not possible.	Selection not possible.	Selection not possible.	Selection not possible.	Selection not possible.	Selection not possible.	Selection not possible.	Selection not possible.	Selection not possible.
Varispeed F7	• Resistance Between Lines • Parameter Calculations	• Resistance Between Lines • Parameter Calculations	• Rotational • Stationary • Resistance Between Lines • Parameter Calculations	Selection not possible.	Selection not possible.	Selection not possible.	Selection not possible.	Selection not possible.	Selection not possible.
Varispeed G7	• Resistance Between Lines • Parameter Calculations	• Resistance Between Lines • Parameter Calculations	• Rotational • Stationary • Resistance Between Lines • Parameter Calculations	• Rotational • Stationary • Resistance Between Lines • Parameter Calculations	• Rotational • Stationary • Resistance Between Lines • Parameter Calculations	Selection not possible.	Selection not possible.	Selection not possible.	Selection not possible.
V1000	Motor 1	• Resistance Between Lines • Energy Saving • Parameter Calculations	Selection not possible.	• Rotational • Resistance Between Lines • Parameter Calculations	Selection not possible.	Selection not possible.	Selection not possible.	Selection not possible.	Selection not possible.
	Motor 2	• Resistance Between Lines • Parameter Calculations	Selection not possible.	• Rotational • Resistance Between Lines • Parameter Calculations	Selection not possible.	Selection not possible.	Selection not possible.	Selection not possible.	Selection not possible.
A1000	Motor 1	• Resistance Between Lines • Energy Saving • Parameter Calculations	• Resistance Between Lines • Energy Saving • Parameter Calculations	• Rotational • Stationary1 • Resistance Between Lines • Stationary2 • Parameter Calculations	Selection not possible.	• Rotational • Stationary1 • Resistance Between Lines • Stationary2 • Inertia • ASR Gain • Parameter Calculations	• Parameter • Stationary1 • Resistance Between Lines	• Parameter • Stationary1 • Resistance Between Lines • Z Pulse • Inertia • ASR Gain	• Parameter • Stationary1 • Resistance Between Lines • Z Pulse • Inertia • ASR Gain
	Motor 2	• Resistance Between Lines • Parameter Calculations	• Resistance Between Lines • Parameter Calculations	• Rotational • Stationary1 • Resistance Between Lines • Stationary2 • Parameter Calculations	Selection not possible.	• Rotational • Stationary1 • Resistance Between Lines • Stationary2 • Inertia • ASR Gain • Parameter Calculations	Selection not possible.	Selection not possible.	Selection not possible.

3) Select the motor for Auto-Tuning.

Select the motor for Auto-Tuning with the drop-down menu. Auto-Tuning can be performed on the motors listed.



Once the type of Auto-Tuning and the motor have been selected, click "Next" to start the Auto-Tuning process.



If you decide not to perform Auto-Tuning at this time, click "Cancel".

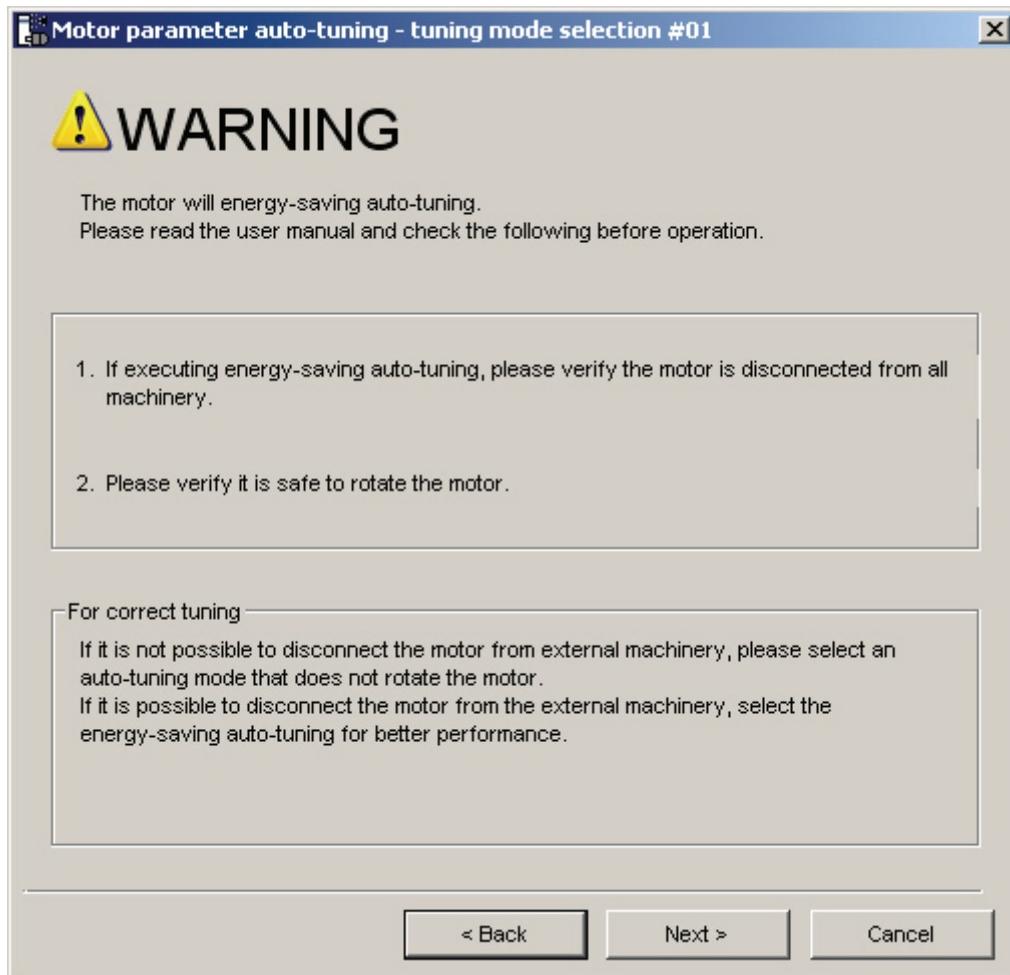
4.5.2 Warning Messages

Warning messages will appear depending on the type of Auto-Tuning process selected.

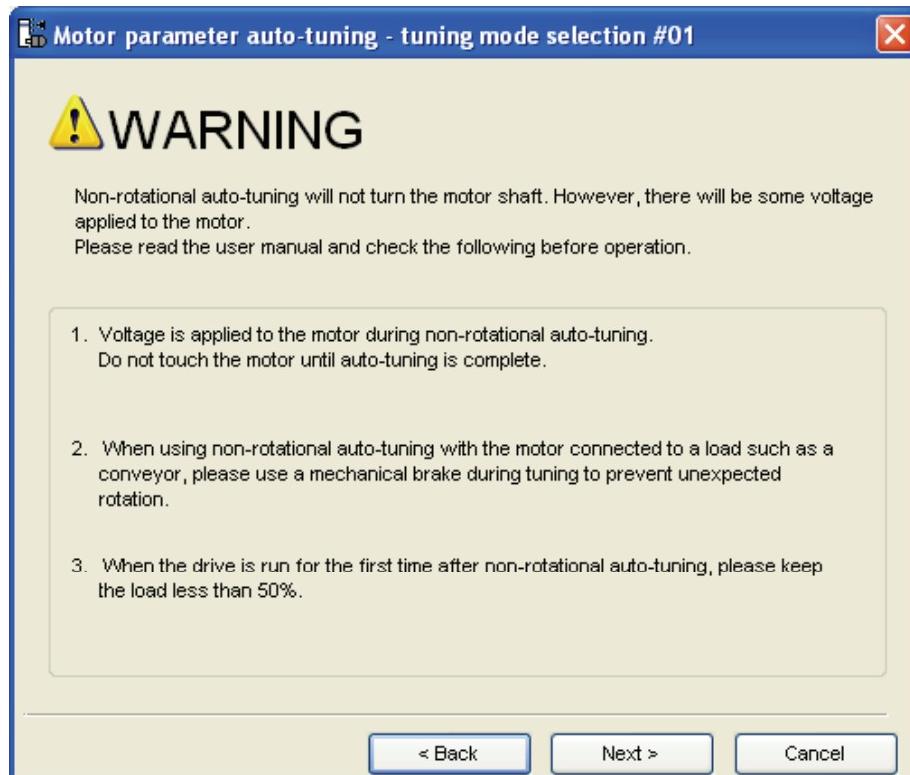
Standard Tuning



Energy-Saving



Tune-No Rotate 1 or 2



Term Resistance

 **WARNING**

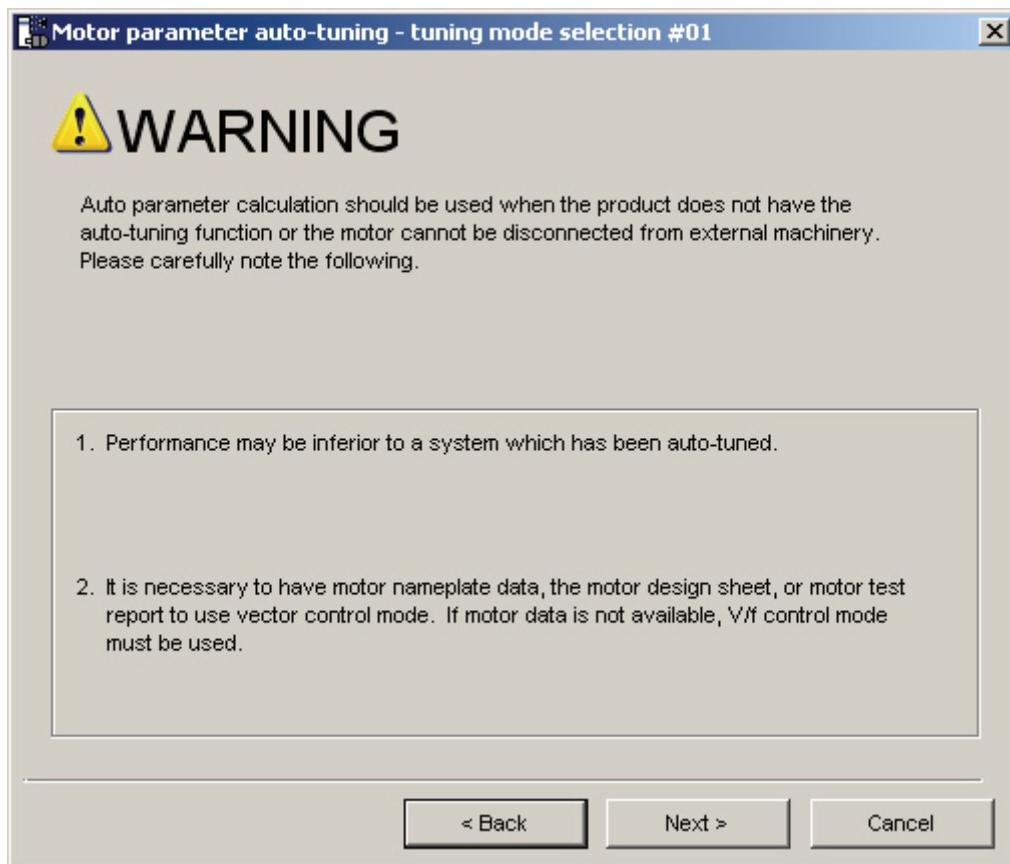
Non-rotational terminal resistance auto-tuning will not turn the motor shaft. However, there will be some voltage applied to the motor.
Please read the user manual and check the following before operation.

1. Voltage is applied to the motor during non-rotational terminal resistance auto-tuning.
Do not touch the motor until auto-tuning is complete.

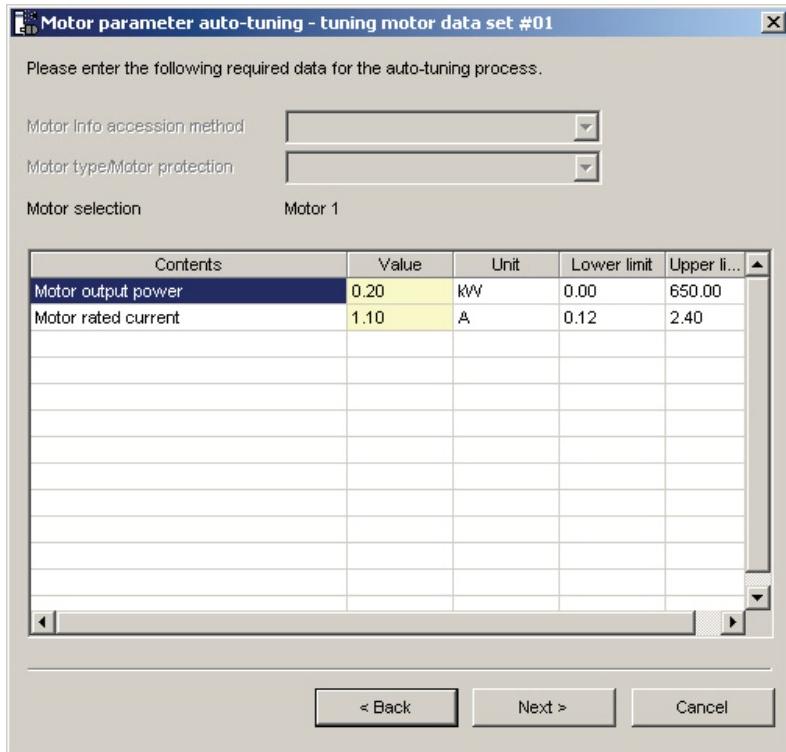
2. When using non-rotational terminal resistance auto-tuning with the motor connected to a load such as a conveyor, please use a mechanical brake during tuning to prevent unexpected rotation.

[< Back](#) [Next >](#) [Cancel](#)

Calculation



4.5.3 Tuning Parameter Setting Screen



The information required can be obtained from the motor nameplate or from the motor test report. Enter the data required into the appropriate column.

NOTE: Data displayed varies by the type of Auto-Tuning selected. Default settings will appear as the lower limit value in the Parameter Edit Mode, while others modes will display the Working value set to the drive.

Set all of the values required, and then click “Next”.

Once Auto-Tuning is complete, click “Cancel”.

To return to the Auto-Tuning window, click “Back”.

If a value is entered that is outside the allowable setting range, then that value displayed will return to the previous value after the unacceptable value is entered.

Contents	Value	Unit	Lower limit	Upper li...	▲
Motor output power	0.20	kW	0.00	650.00	
Motor rated voltage	230.0	VAC	0.0	255.0	
Motor rated current	1.10	A	0.12	2.40	
Motor base frequency	60.0	Hz	0.0	400.0	

Contents	Value	Unit	Lower limit	Upper li...	▲
Motor output power	0.20	kW	0.00	650.00	
Motor rated voltage	230	VAC	0.0	255.0	
Motor rated current	2.50	A	0.12	2.40	

Contents	Value	Unit	Lower limit	Upper li...	▲
Motor output power	0.20	kW	0.00	650.00	
Motor rated voltage	230.0	VAC	0.0	255.0	
Motor rated current	1.10	A	0.12	2.40	
Motor base frequency	60.0	Hz	0.0	400.0	

The table below shows the type of information required to perform Auto-Tuning.

No.	Input Item	Input Method	Rotational Stationary	Resistance Between Lines	Parameter Calculations	
					Nameplate	Test Report
1	Motor Rated Output (*1)	Numeric	O(1)	O(1)		
2	Motor Rated Voltage (*3)	Numeric	O(2)		O(8)	O(8)
3	Motor Rated Current	Numeric	O(3)	O(2)		
4	Motor Base Frequency	Numeric	O(4)			
5	Number of Motor Poles	Numeric	O(5)			
6	Motor Base Revolutions	Numeric	O(6)			
7	PG Parameter (*2)	Numeric	O(7)		O(3)	O(3)
8	Drive Input Voltage	Numeric			O(1)	O(1)
9	Motor Rated Capacity	Numeric			O(2)	O(2)
10	PG Poles Count	Numeric			O(4)	O(4)
11	Motor Rated Output Current	Numeric			O(5)	O(5)
12	Motor Rated Frequency	Numeric			O(6)	O(6)
13	Motor Rated Revolutions	Numeric			O(7)	O(7)
14	Motor Insulation Type	Selection				O(9)
15	Motor Resistance Between Lines Value	Numeric				O(10)
16	Measured Temperature of Motor Resistance Between Lines	Numeric				O(11)
17	Leakage Inductance (*4)	Numeric				O(12)
18	Motor Iron Loss Torque Compensation (*5)	Numeric				O(13)

A circle indicates that this data is displayed. The order the data is displayed in is indicated in parenthesis.

Cells shaded in gray indicate that this data is not available and therefore not displayed.

*1 G5 does not have this setting.

*2 Displayed when using a PG motor encoder.

*3 Displayed when using the motor test report to change the motor rated voltage to the motor no-load voltage.

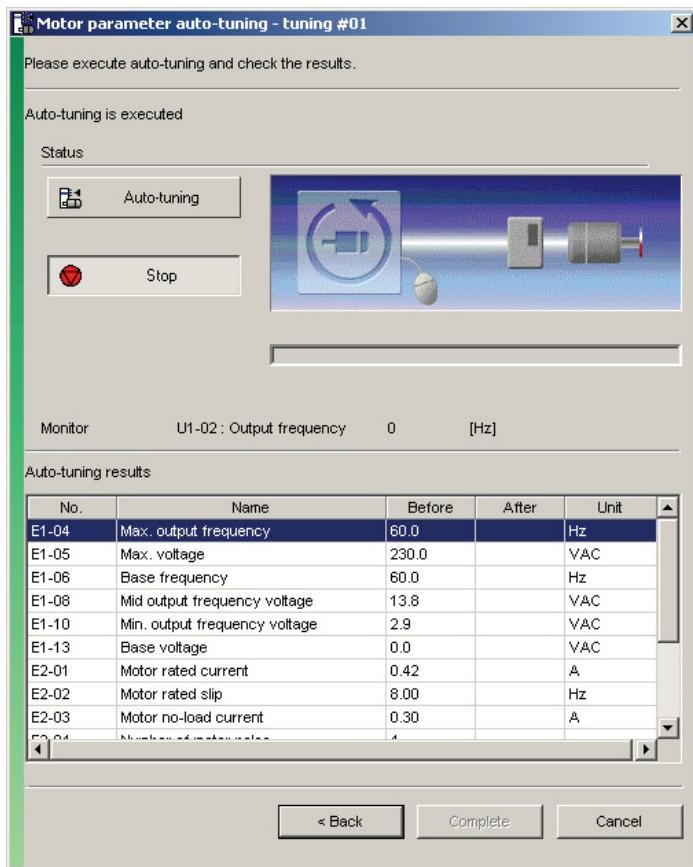
*4 Displayed in V/f Control, with or without a PG motor encoder.

*5 Displayed only when V/f Control (without a PG encoder) is selected.

Items concerning the type of motor and the type of motor protection can be selected only in the Parameter Calculations Mode.

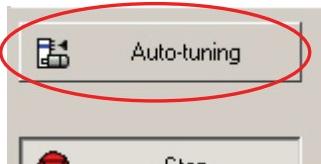
4.5.4 Auto-Tuning Screen

Starting Auto-Tuning



NOTE: The data displayed will differ by the type of Auto-Tuning selected.

- 1) To start the Auto-Tuning process, click "Auto-tuning".

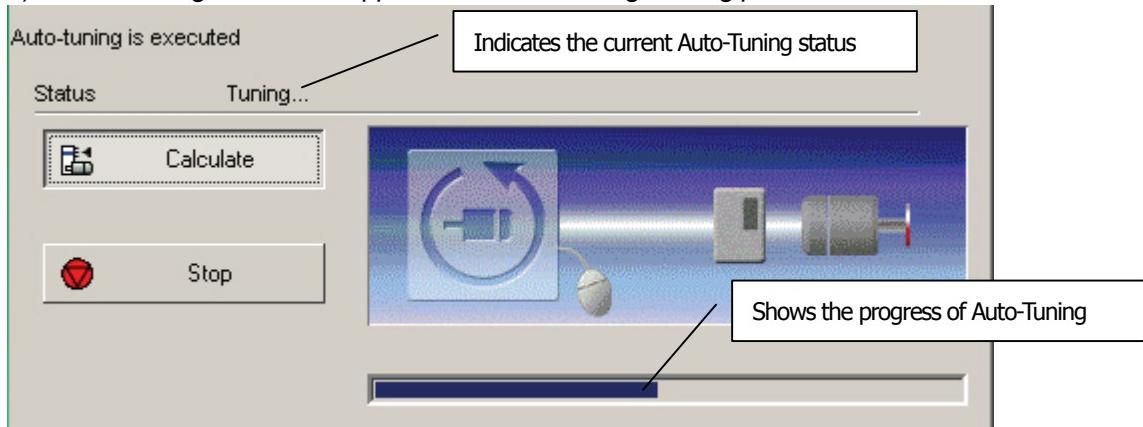


NOTE: If an error occurs while Auto-Tuning the drive, click the "Back" button to return to the Auto-Tuning window and re-enter the current values.

- 2) To stop Auto-Tuning, click "Stop".



- 3) The following window will appear while Auto-Tuning is being performed.



- 4) Once Auto-Tuning is complete, the values set in the Auto-Tuning process will appear:

No.	Name	Before	After	Unit
b8-04	Energy-saving coefficient	356.9	481.7	VAC
E1-01	Input voltage setting	230	230	VAC
E1-03	V/F pattern selection	000F	000F	-
E1-04	Max. output frequency	60.0	60.0	Hz
E1-05	Max. voltage	230.0	250.0	VAC
E1-06	Base frequency	60.0	60.0	Hz
E1-08	Mid output frequency voltage	18.4	23.0	VAC
E1-10	Min. output frequency voltage	13.8	17.2	VAC
E1-13	Base voltage	0.0	250.0	VAC
E2-04	Motor constant	4.40	0.40	A·m

Because the values for these parameters were changed during the Auto-Tuning process, they will now appear with a green background. The row will appear in blue when selected by the mouse.

- 5) The results from Auto-Tuning are written to the drive. Once Auto-Tuning is complete, click "Complete".



Click "Back" to return to the Auto-Tuning Parameter Setting window.

4.6 Test Run

4.6.1 Manual Operation

The motor operates at the specific speed setting that has been entered. Manual Operation lets the user check the direction of motor rotation and the speed setting without needing to use an upper controller.

Warning

Be sure to take proper precautions when performing a Manual Operation.

Read the manually thoroughly, paying particular attention to the following points:

Clear the area around the motor.

Clicking on the button marked “Run” will cause the motor to rotate at the designated speed.

Make sure proper precautions have been taken for the area surrounding the motor.

Make sure a Fast Stop has been set to one of the terminals.

If an error occurs with the PC or with this function while a Manual Run is being performed, there is a chance the motor will continue rotating. Be sure that a Fast Stop or some other type of emergency stop has been set to one of the external terminals in order to halt the motor.

Do not edit parameter settings with any other software than DriveWizard Plus.

Use DriveWizard Plus only to edit parameter settings. Changing the frequency reference units, for example, with the digital operator or some other device can cause the motor to suddenly speed up and is extremely dangerous.

Check all parameter settings if a fault occurs.

This function switches the frequency reference selection, parameter settings, and Run command selection over to MEMOBUS communications. Check PC and all function settings if a communications fault occurs.

Always cycle power to the drive if a fault occurs.

This function works by assigning the frequency reference selection (comnet), parameter settings, and Run command selection (comctrl) over to MEMOBUS communications. Check PC and all function settings if a communications fault occurs, and cycle power to the drive.

Extra Notes on Using Manual Operation

This function is for setting up the drive and performing a test run. It is strongly recommended that the motor be fully decoupled from the load for proper setup.

NOTE: Manual Operation cannot be performed if the Baseblock command is currently enable via one of the input terminals.

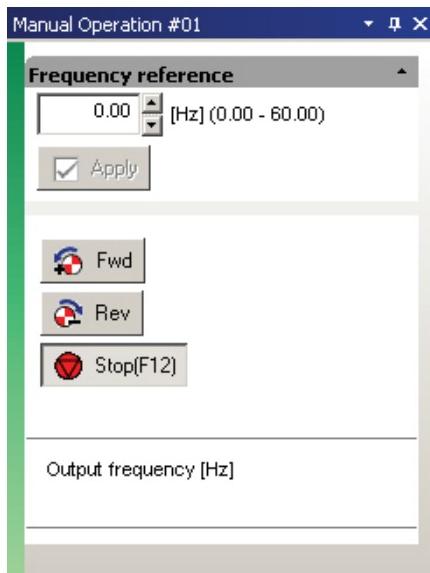
NOTE: To operate G5 manually, set the frequency references units to Hz (the default setting of o1-03).

When performing a Manual Operation, the following conditions are required:

- The drive must be in REMOTE mode, either set by the digital operator or by one of the input terminals
- No faults occur
- The drive is not currently running the motor (i.e., a Run command is not present)

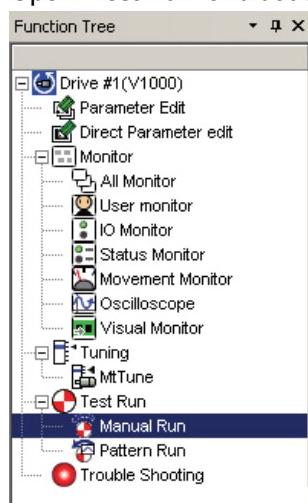
Follow the procedure below to perform a Manual Operation:

- 1) Display the Manual Operation window.

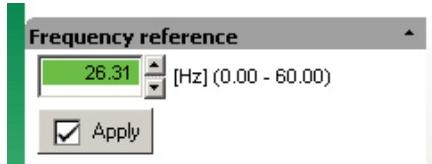


There are three ways to call up the Manual Operation window:

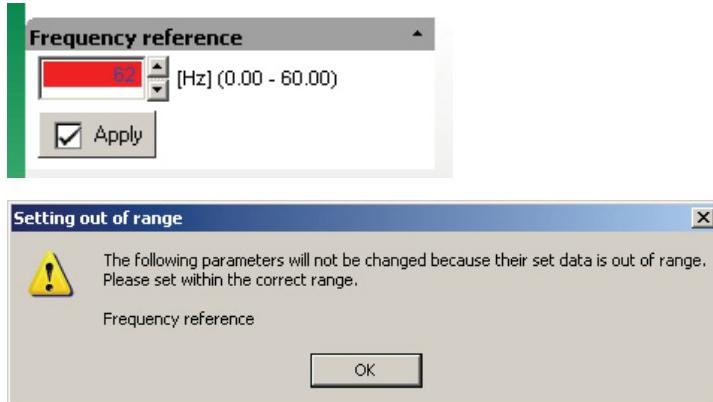
- View (V) in the Main Menu
View (V) → “Manual Operation”
- toolbar
Click
- Function Tree
Open “Test Run” and double-click on “Manual Run”



- 2) Set the frequency reference by entering the frequency reference and clicking “Apply”.

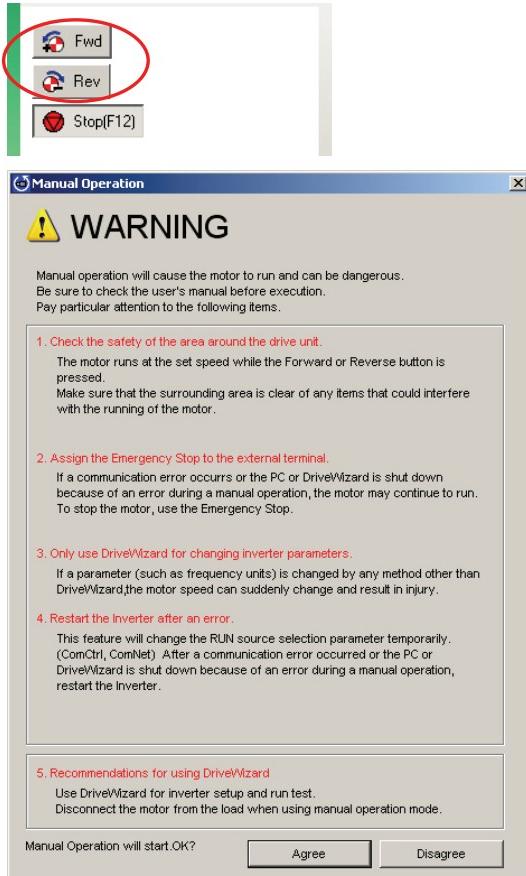


If the frequency reference entered is outside the allowable range, the entered value will appear in red and a warning message will appear.



- 3) Rotate the motor

When the Fwd or Rev buttons are first pushed, a warning message will appear:

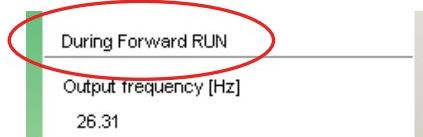


- 4) Click "Agree" to begin rotating the motor. Clicking "Decline" will cancel the process and the motor will not rotate.

NOTE: This warning message is only displayed the first time the Run command is issued, and will not appear again until DriveWizard Plus is restarted.

While the motor is rotating, the following display will appear:

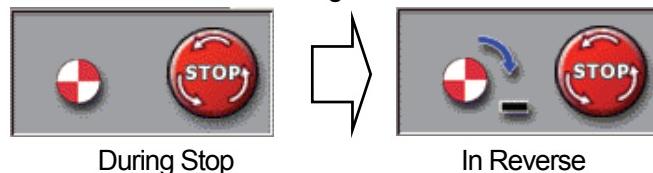
- A display to indicate the current operation status of the motor, which includes During Forward RUN / During Reverse RUN / Zero Speed / During Stop / Fault / Drive Ready)



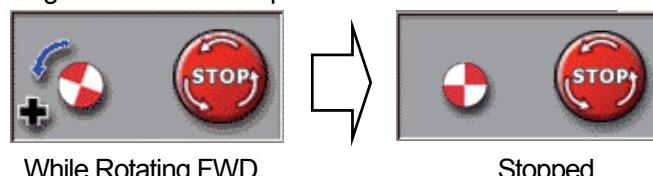
During run, a window will appear near the task tray to stopping the motor.
When a Forward command is given, the icon will rotate counterclockwise.



When a Reverse command is given, the icon will rotate clockwise.



Clicking on the window stops the motor.

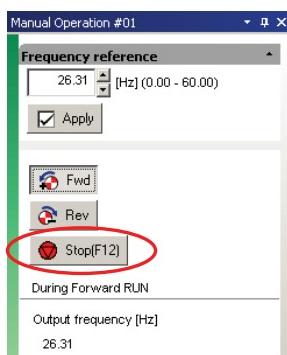


During run, an icon will appear in green to indicate that the drive is operating the motor.



5) Stop the motor

To stop the motor, click on the "Stop" button as shown below:



4.6.2 Pattern Operation

Pattern Operation lets the user take advantage of parameters that have already been programmed to operate the drive automatically.

⚠ Warning

Be sure to take proper precautions when performing a Pattern Operation.

Read the manually thoroughly, paying particular attention to the following points:

Clear the area around the motor.

Clicking on the button marked "Run" will cause the motor to rotate at the designated speed.

Make sure proper precautions have been taken for the area surrounding the motor.

Make sure a Fast Stop has been set to one of the terminals.

If an error occurs with the PC or with this function while a Manual Run is being performed, there is a chance the motor will continue rotating. Be sure that a Fast Stop or some other type of emergency stop has been set to one of the external terminals in order to halt the motor.

Do not edit parameter settings with any other software than DriveWizard Plus.

Use DriveWizard Plus only to edit parameter settings. Changing the frequency reference units, for example, with the digital operator or some other device can cause the motor to suddenly speed up and is extremely dangerous.

Check all parameter settings if a fault occurs.

This function switches the frequency reference selection, parameter settings, and Run command selection over to MEMOBUS communications. Check PC and all function settings if a communications fault occurs.

Always cycle power to the drive if a fault occurs.

This function works by assigning the frequency reference selection (comnet), parameter settings, and Run command selection (comctrl) over to MEMOBUS communications. Check PC and all function settings if a communications fault occurs, and cycle power to the drive.

Movement during Operation

Because this function relies on an internal Run command, there may be some movement in regards to motor shaft position. Take particular caution of positioning when repeating the same task as this difference may compound.

Operation Status Display during Run

Although this function displays the operation status while running the motor, environmental factors make cause there to be some difference between what appears on the PC screen and the actual waveform. Take this into consideration when using this function.

Extra Notes on Using Manual Run

This function is for setting up the drive and performing a test run. It is strongly recommended that the motor be fully decoupled from the load for proper setup

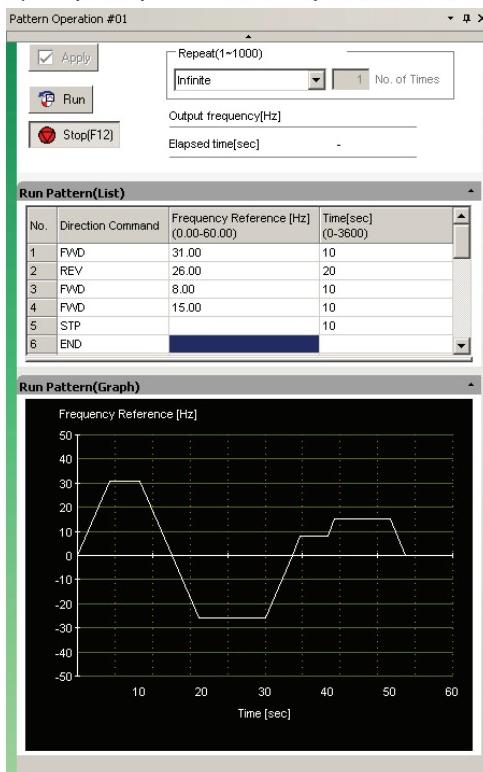
NOTE: Pattern Operation uses the Accel/Decel Time 1 set to the multi-function contact input terminals and disregards Accel/Decel Time 2 and 3, as well as acceleration and deceleration time settings for motor 2.

NOTE: Pattern Operation cannot be performed if the Baseblock command is currently enabled via one of the input terminals.

NOTE: To operate G5 manually, set the frequency references units to Hz (the default setting of o1-03).

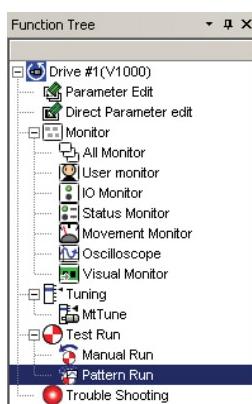
Follow the procedure below to perform a Pattern Operation:

1) Open up the Pattern Operation window.

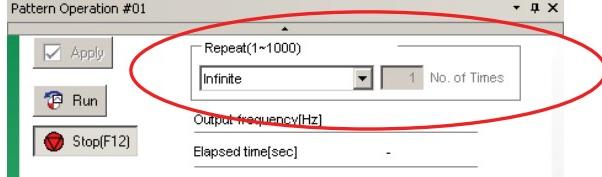


There are three ways to open up the Pattern Operation window:

- From the Main Menu
Main Menu: "View (V)" → "Pattern Operation"
- From the toolbar
Click
- From the Function Tree
Open "Test Run" in the Function Tree and double-click "Pattern Run".



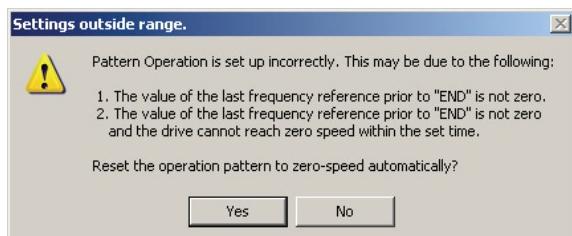
- 2) Set the pattern of operation for a Pattern Operation
 - a) Set the direction of rotation. Select the direction: END / FWD / REV / STP
 - b) Set the output frequency. Set the frequency reference within the allowable range (between 0.0 to 60.0 Hz).
- c) Set the time for each operation. Time can be set from 0 to 3600 seconds. Specify the time the drive should operate from when the Run command is given. This time will start over when a new Run command is given.
- 3) Set the number of times the drive should execute the command.



To set the number of repeat times the command should be executed, first specify whether the command should repeat a specified number of times or repeat indefinitely. Next, set the number of times the pattern should be repeated. The total number of times can be set from 1 to 1000. This value is enabled only when the “Specify number of times” setting is enabled.

4) Apply the settings that have been entered

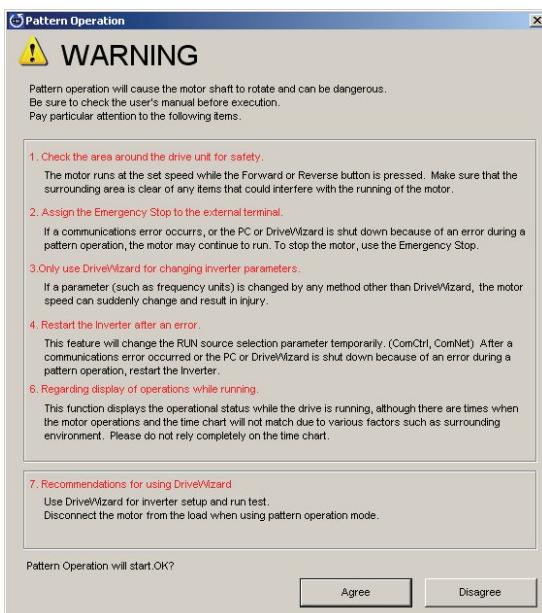
Click “Apply” to check the contents that have been set. Drive performance will appear in a graph. Once the pattern is complete and the drive stops, the following window will appear:



To accept the operation pattern that has been set until the drive reaches zero speed, click “Yes”. To return to the Pattern Run window and start over again, click “No”.

5) Start operation

Clicking  will generate the following window:



Click "Agree" to begin rotating the motor. Clicking on "Disagree" will stop the operation and the motor will not rotate.

NOTE: This warning message will appear only once while DriveWizard Plus is operating. It will not appear again until the program is closed and then reopened.

Verify drive operation progress by viewing the display shown below:

- Current drive status:

Output frequency[Hz]	18.24
Elapsed time[sec]	11
Repeat[times]	1 / -

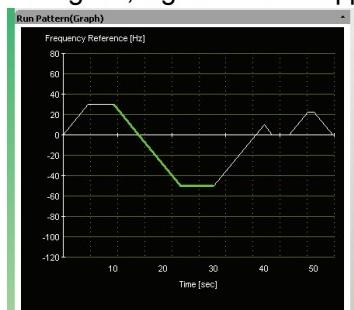
- Operation pattern with a list

The current operation pattern being executed will be highlighted in green.

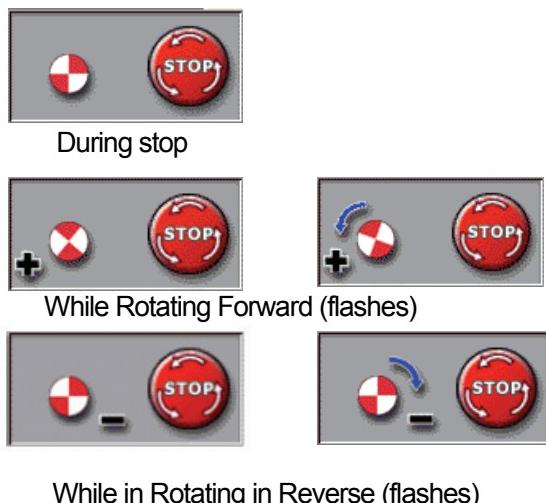
Run Pattern(List)			
No.	Direction Command	Frequency Reference [Hz] (0.00-60.00)	Time[sec] (0-3600)
1	FWD	30.00	10
2	REV	50.00	20
3	FWD	10.00	10

- The operation pattern appears in green

During run, a green line will appear to indicate drive operation and progress on the graph.



- During run, the icon shown below will appear near the task tray. The icon contains an animation that will mimic the status of the motor.
The animation will change when the motor is running or is stopped.



During run, a green bar will appear in the caption bar.



6) Stop the motor

Clicking “STOP” while the motor is running will cause the drive to stop the motor.



You can stop the motor at any time by clicking the “Stop” button that appears during Run. The icon is related to the task window.



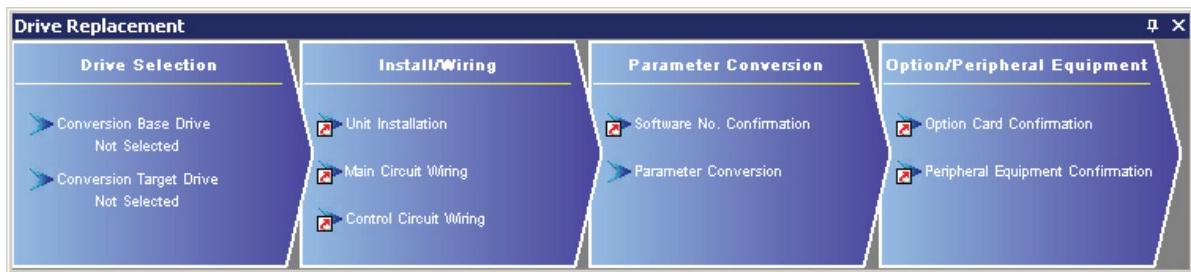
4.7 Drive Replacement

The Drive Replacement function of DriveWizard Plus is useful when replacing a drive with a more advanced model, such as when upgrading from a 7th generation drive to a 1000 series model.

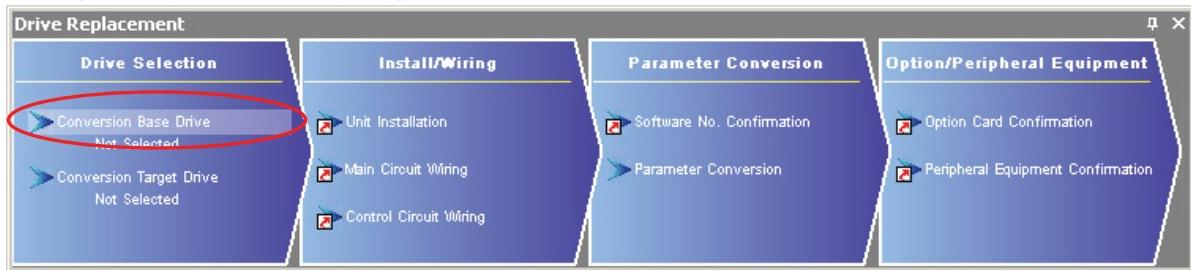
There are three types of drive replacement:

- Replacement with a different type of drive
- Replacing parameter settings only
- Displaying the data needed in order to replace the drive

You can call up the Drive Replacement window by clicking “Drive Replacement” (R) in the Tools (T) menu.



Right-clicking any one of the items in the Drive Replacement window will highlight that item, and double-clicking will open the corresponding menu.



Icons used for drive replacement are described in the table below:

Icon	Situation
>	Opens a separate window
> <input checked="" type="checkbox"/>	This task has been taken completed for drive replacement. Ensures that the drive selected is correct.
> <input type="checkbox"/>	Indicates that this task still needs to be taken care of in order to replace the drive.

4.7.1 Drive Replacement and Model Matching

Below is a list of corresponding drive models:

Replacing V7 with V1000: Corresponding Models

Drive to be Replaced (V7/ V7 (VER: B))		Replacement Drive (V1000)			
		Normal Duty Rating		Heavy Duty Rating	
20	CIMR-V7**B0P1 (Single-Phase 200 V 0.1 kW)	-	N/A	30	CIMR-V*B*0001*** (Single-Phase 200 V 0.1 kW)
21	CIMR-V7**B0P2 (Single-Phase 200 V 0.2 kW)	30	CIMR-V*B*0001*** (Single-Phase 200 V 0.1 kW)	31	CIMR-V*B*0002*** (Single-Phase 200 V 0.2 kW)
22	CIMR-V7**B0P4 (Single-Phase 200 V 0.4 kW)	31	CIMR-V*B*0002*** (Single-Phase 200 V 0.2 kW)	32	CIMR-V*B*0003*** (Single-Phase 200 V 0.4 kW)
23	CIMR-V7**B0P7 (Single-Phase 200 V 0.75 kW)	32	CIMR-V*B*0003*** (Single-Phase 200 V 0.4 kW)	33	CIMR-V*B*0006*** (Single-Phase 200 V 0.75 kW)
24	CIMR-V7**B1P5 (Single-Phase 200 V 1.5 kW)	33	CIMR-V*B*0006*** (Single-Phase 200 V 0.75 kW)	34	CIMR-V*B*0010*** (Single-Phase 200 V 1.5 kW)
25	CIMR-V7**B2P2 (Single-Phase 200 V 2.2 kW)	34	CIMR-V*B*0010*** (Single-Phase 200 V 1.5 kW)	35	CIMR-V*B*0012*** (Single-Phase 200 V 2.2 kW)
27	CIMR-V7**B3P7 (Single-Phase 200 V 3.7 kW)	-	N/A	37	CIMR-V*B*0020*** (Single-Phase 200 V 3.7 kW)
0	CIMR-V7**20P1 (3-Phase 200 V 0.1 kW)	-	N/A	60	CIMR-V*2*0001*** (3-Phase 200 V 0.1 kW)
1	CIMR-V7**20P2 (3-Phase 200 V 0.2 kW)	60	CIMR-V*2*0001*** (3-Phase 200 V 0.1 kW)	61	CIMR-V*2*0002*** (3-Phase 200 V 0.2 kW)
2	CIMR-V7**20P4 (3-Phase 200 V 0.4 kW)	61	CIMR-V*2*0002*** (3-Phase 200 V 0.2 kW)	62	CIMR-V*2*0004*** (3-Phase 200 V 0.4 kW)
3	CIMR-V7**20P7 (3-Phase 200 V 0.75 kW)	62	CIMR-V*2*0004*** (3-Phase 200 V 0.4 kW)	64	CIMR-V*2*0008*** (3-Phase 200 V 1.1 kW)
4	CIMR-V7**21P5 (3-Phase 200 V 1.5 kW)	64	CIMR-V*2*0008*** (3-Phase 200 V 1.1 kW)	65	CIMR-V*2*0010*** (3-Phase 200 V 1.5 kW)
5	CIMR-V7**22P2 (3-Phase 200 V 2.2 kW)	65	CIMR-V*2*0010*** (3-Phase 200 V 1.5 kW)	67	CIMR-V*2*0018*** (3-Phase 200 V 3.0 kW)
7	CIMR-V7**23P7 (3-Phase 200 V 3.7 kW)	67	CIMR-V*2*0018*** (3-Phase 200 V 3.0 kW)	68	CIMR-V*2*0020*** (3-Phase 200 V 3.7 kW)
9	CIMR-V7**25P5 (3-Phase 200 V 5.5 kW)	68	CIMR-V*2*0020*** (3-Phase 200 V 3.7 kW)	6A	CIMR-V*2*0030*** (3-Phase 200 V 5.5 kW)
10	CIMR-V7**27P5 (3-Phase 200 V 7.5 kW)	6A	CIMR-V*2*0030*** (3-Phase 200 V 5.5 kW)	6B	CIMR-V*2*0040*** (3-Phase 200 V 7.5 kW)
41	CIMR-V7**40P2 (3-Phase 400 V 0.2 kW)	-	N/A	91	CIMR-V*4*0001*** (3-Phase 400 V 0.2 kW)
42	CIMR-V7**40P4 (3-Phase 400 V 0.4 kW)	91	CIMR-V*4*0001*** (3-Phase 400 V 0.2 kW)	92	CIMR-V*4*0002*** (3-Phase 400 V 0.4 kW)
43	CIMR-V7**40P7 (3-Phase 400 V 0.75 kW)	92	CIMR-V*4*0002*** (3-Phase 400 V 0.4 kW)	93	CIMR-V*4*0004*** (3-Phase 400 V 0.75 kW)
44	CIMR-V7**41P5 (3-Phase 400 V 1.5 kW)	93	CIMR-V*4*0004*** (3-Phase 400 V 0.75 kW)	94	CIMR-V*4*0005*** (3-Phase 400 V 1.5 kW)
45	CIMR-V7**42P2 (3-Phase 400 V 2.2 kW)	94	CIMR-V*4*0005*** (3-Phase 400 V 1.5 kW)	95	CIMR-V*4*0007*** (3-Phase 400 V 2.2 kW)
46	CIMR-V7**43P0 (3-Phase 400 V 3.0 kW)	95	CIMR-V*4*0007*** (3-Phase 400 V 2.2 kW)	96	CIMR-V*4*0009*** (3-Phase 400 V 3.0 kW)
47	CIMR-V7**43P7 (3-Phase 400 V 3.7 kW)	96	CIMR-V*4*0009*** (3-Phase 400 V 3.0 kW)	97	CIMR-V*4*0011*** (3-Phase 400 V 3.7 kW)
49	CIMR-V7**45P5 (3-Phase 400 V 5.5 kW)	97	CIMR-V*4*0011*** (3-Phase 400 V 3.7 kW)	99	CIMR-V*4*0018*** (3-Phase 400 V 5.5 kW)
50	CIMR-V7**47P5 (3-Phase 400 V 7.5 kW)	99	CIMR-V*4*0018*** (3-Phase 400 V 5.5 kW)	9A	CIMR-V*4*0023*** (3-Phase 400 V 7.5 kW)

Replacing J7 with J1000: Corresponding Models

Drive to be Replaced (J7)		Replacement Drive (J1000)		
		Normal Duty Rating		Heavy Duty Rating
10	CIMR-J7**B0P1 (Single-Phase 200 V 0.1 kW)	-	N/A	30 CIMR-J*B*0001*** (Single-Phase 200V 0.1kW)
11	CIMR-J7**B0P2 (Single-Phase 200V 0.2kW)	30	CIMR-J*B*0001*** (Single-Phase 200V 0.1kW)	31 CIMR-J*B*0002*** (Single-Phase 200V 0.2kW)
12	CIMR-J7**B0P4 (Single-Phase 200V 0.4kW)	31	CIMR-J*B*0002*** (Single-Phase 200V 0.2kW)	32 CIMR-J*B*0003*** (Single-Phase 200V 0.4kW)
13	CIMR-J7**B0P7 (Single-Phase 200V 0.75kW)	32	CIMR-J*B*0003*** (Single-Phase 200V 0.4kW)	33 CIMR-J*B*0006*** (Single-Phase 200V 0.75kW)
14	CIMR-J7**B1P5 (Single-Phase 200V 1.5kW)	-	N/A	34 CIMR-J*B*0010*** (Single-Phase 200V 1.5kW)
0	CIMR-J7**20P1 (3-Phase 200V 0.1kW)	-	N/A	60 CIMR-J*2*0001*** (3-Phase 200V 0.1kW)
1	CIMR-J7**20P2 (3-Phase 200V 0.2kW)	60	CIMR-J*2*0001*** (3-Phase 200V 0.1kW)	61 CIMR-J*2*0002*** (3-Phase 200V 0.2kW)
2	CIMR-J7**20P4 (3-Phase 200V 0.4kW)	61	CIMR-J*2*0002*** (3-Phase 200V 0.2kW)	62 CIMR-J*2*0004*** (3-Phase 200V 0.4kW)
3	CIMR-J7**20P7 (3-Phase 200V 0.75kW)	62	CIMR-J*2*0004*** (3-Phase 200V 0.4kW)	63 CIMR-J*2*0006*** (3-Phase 200V 0.75kW)
4	CIMR-J7**21P5 (3-Phase 200V 1.5kW)	64	CIMR-J*2*0008*** (3-Phase 200V 1.1kW)	65 CIMR-J*2*0010*** (3-Phase 200V 1.5kW)
5	CIMR-J7**22P2 (3-Phase 200V 2.2kW)	65	CIMR-J*2*0010*** (3-Phase 200V 1.5kW)	66 CIMR-J*2*0012*** (3-Phase 200V 2.2kW)
7	CIMR-J7**23P7 (3-Phase 200V 3.7kW)	67	CIMR-J*2*0018*** (3-Phase 200V 3.0kW)	68 CIMR-J*2*0020*** (3-Phase 200V 3.7kW)
21	CIMR-J7**40P2 (3-Phase 400V 0.2kW)	-	N/A	91 CIMR-J*4*0001*** (3-Phase 400V 0.2kW)
22	CIMR-J7**40P4 (3-Phase 400V 0.4kW)	91	CIMR-J*4*0001*** (3-Phase 400V 0.2kW)	92 CIMR-J*4*0002*** (3-Phase 400V 0.4kW)
23	CIMR-J7**40P7 (3-Phase 400V 0.75kW)	92	CIMR-J*4*0002*** (3-Phase 400V 0.4kW)	93 CIMR-J*4*0004*** (3-Phase 400V 0.75kW)
24	CIMR-J7**41P5 (3-Phase 400V 1.5kW)	93	CIMR-J*4*0004*** (3-Phase 400V 0.75kW)	94 CIMR-J*4*0005*** (3-Phase 400V 1.5kW)
25	CIMR-J7**42P2 (3-Phase 400V 2.2kW)	94	CIMR-J*4*0005*** (3-Phase 400V 1.5kW)	95 CIMR-J*4*0007*** (3-Phase 400V 2.2kW)
26	CIMR-J7**43P0 (3-Phase 400V 3.0kW)	95	CIMR-J*4*0007*** (3-Phase 400V 2.2kW)	96 CIMR-J*4*0009*** (3-Phase 400V 3.0kW)
27	CIMR-J7**43P7 (3-Phase 400V 3.7kW)	96	CIMR-J*4*0009*** (3-Phase 400V 3.0kW)	97 CIMR-J*4*0011*** (3-Phase 400V 3.7kW)

4.7.2 Selecting the Replacement Drive

Used to set data for the drive to be replaced or the new drive that will replace the current model.

4.7.2.1 Drive to Replace

There are two ways to replace the current drive:

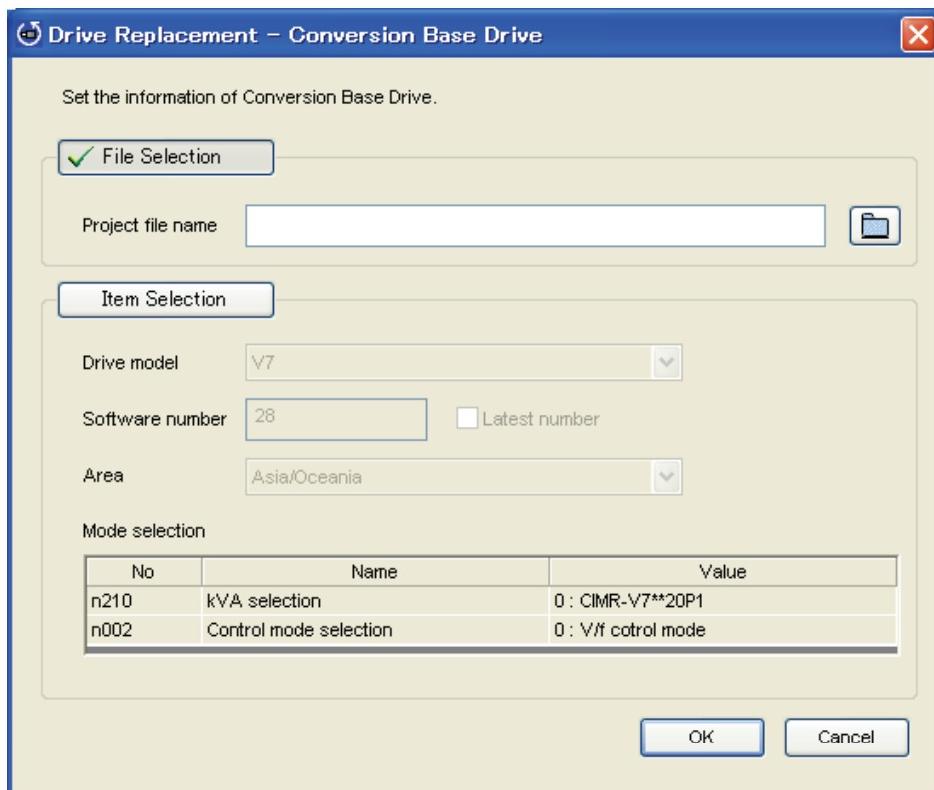
- Replace files only
- Replace selected items only

To replace files, follow the instructions below:

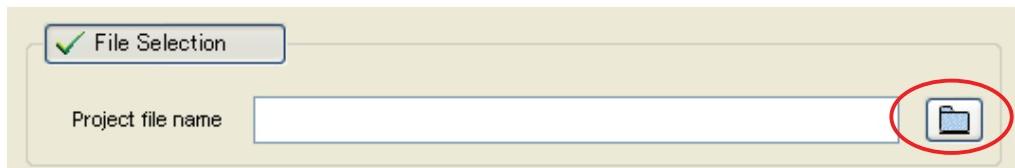
- 1) Click on “Conversion base drive”.



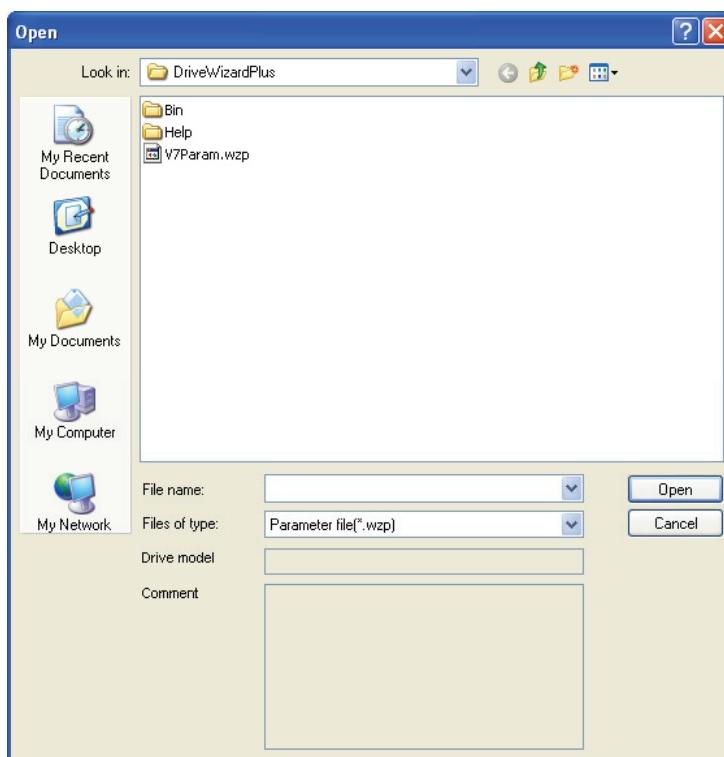
The Conversion Base Drive window will appear.



- 2) Click on the icon to open a file.



The following screen will appear:

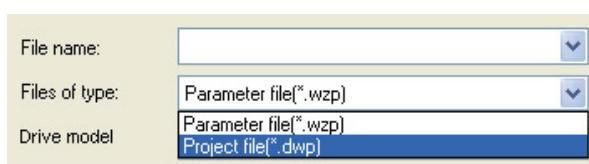


There are two types of files for converting a drive:

Parameter file (*.wzp)

Project file (*.dwp)

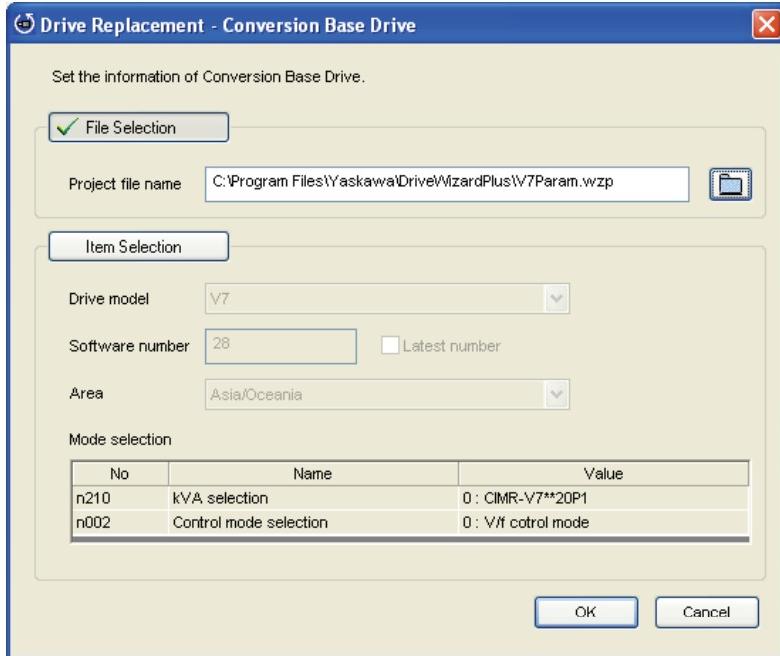
To select a Project, set the File Type selection for "Project (*.dwp)".



- 3) After selecting the parameter file or a project file for the drive to be replaced, click "Open".



The following window will appear:



*Make sure the correct data appears in the window.

4) Click "OK"



The following window will appear:



*Make sure the data is correct for the drive being replaced.

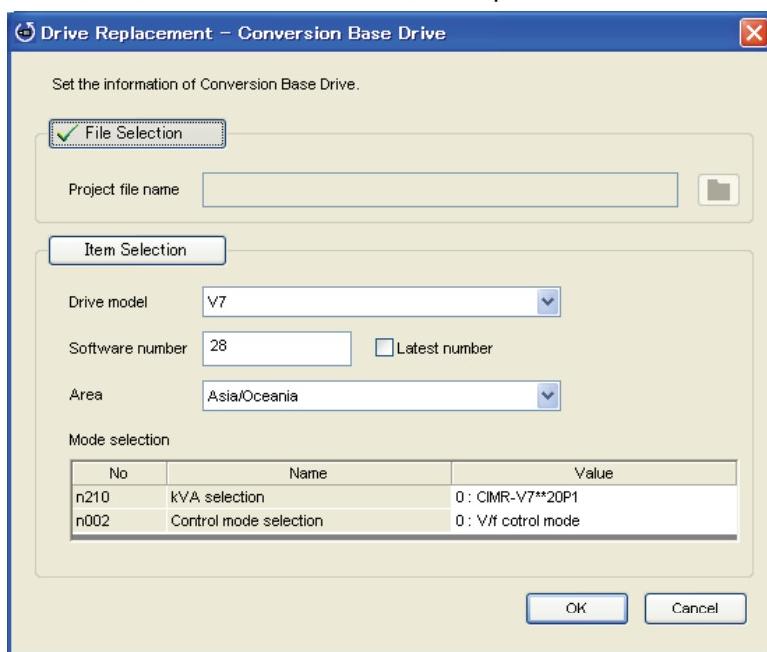


Follow the procedure below to use the “Item Selection Method” to select the drive for replacement.

- 1) Click “Drive to replace”.



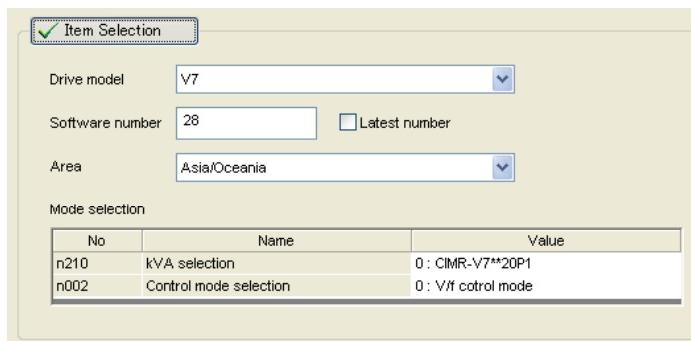
The next window asks for the drive to be replaced.



- 2) Click “Item Selection.”



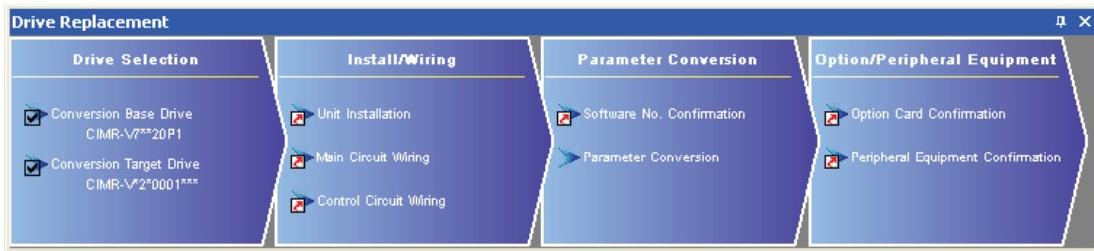
Drive data can now be entered. Enter the required information concerning the model to be replaced.



3) Click "OK".



The following window will appear:



*Double-check the data to make sure that the proper drive model is displayed.

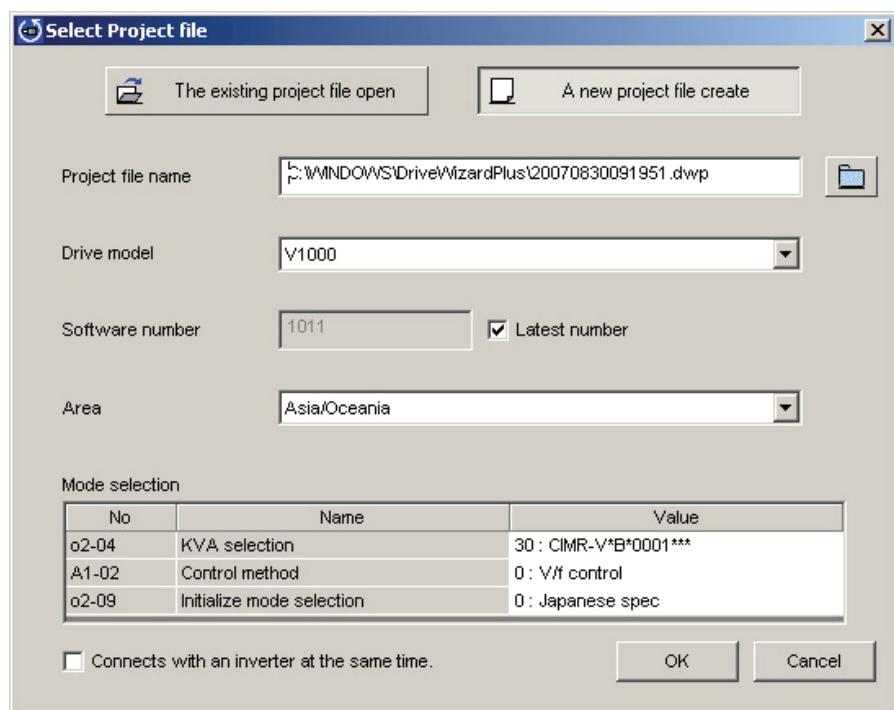


4.7.2.2 Selecting the Conversion Target Drive

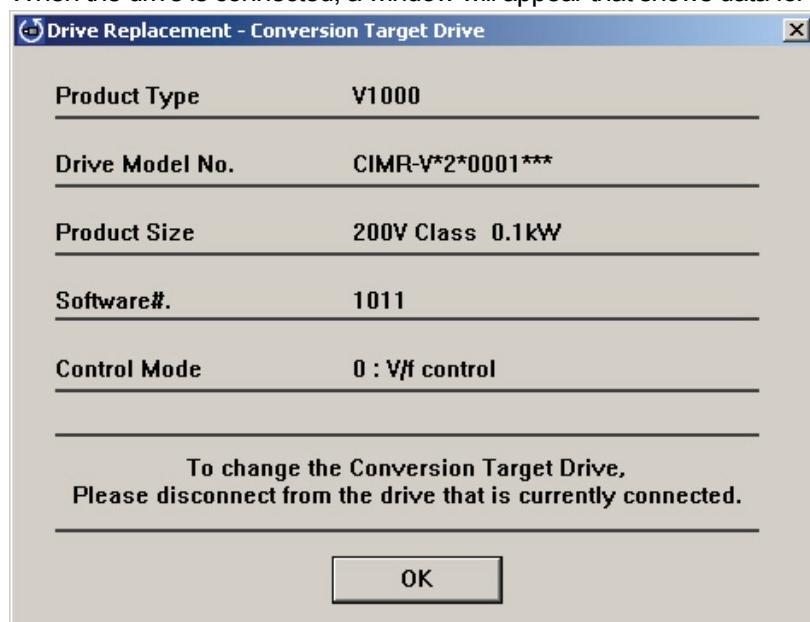
The following instructions explain how to enter information for the new replacement drive.

If the drive is not connected and a Project is not open, then a window will appear to ask if a new file should be created or if an existing file should be opened.

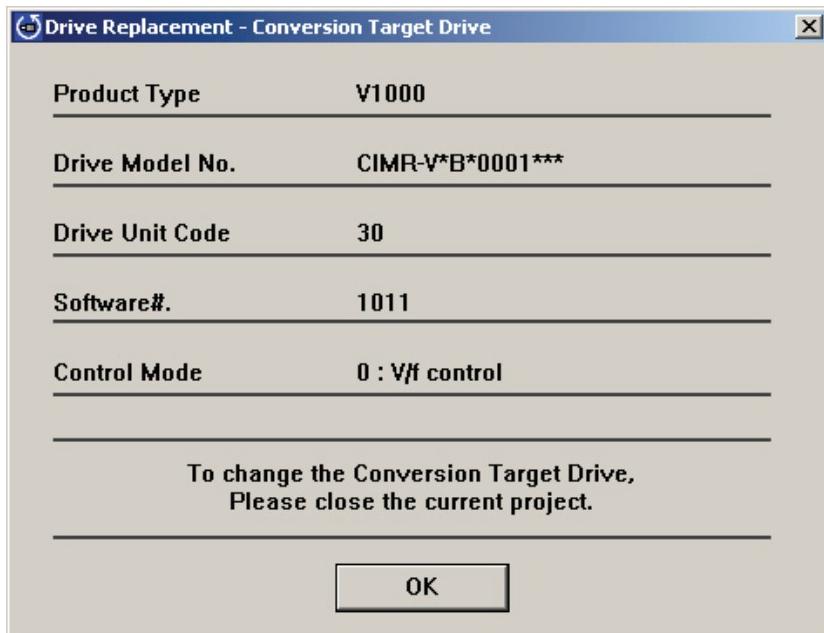
Open a project file for the replacement drive.



When the drive is connected, a window will appear that shows data for that drive:



If no drive is connected but a Project is already open, then data for the drive the Project was created for will appear:



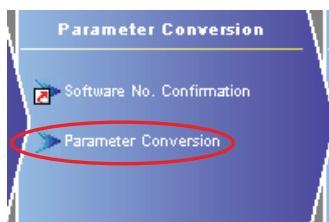
4.7.3 Parameter Conversion

After verifying that all of the information on the drive model is correct, execute a Parameter Conversion.

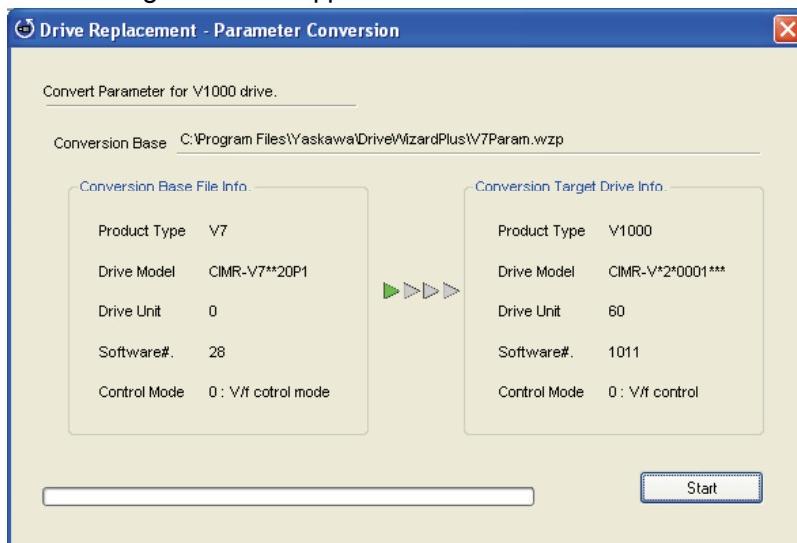
NOTE: If data for the drive that is to be converted has not been entered, then Parameter Conversion cannot be executed.

Follow the procedure below:

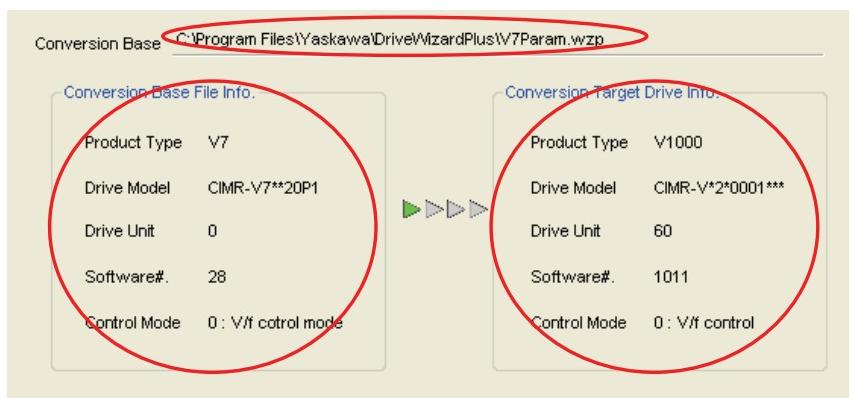
- 1) Select the drive to be converted with “File Selection”.
- 2) Select the new replacement drive.
- 3) Click on “Parameter Conversion”.



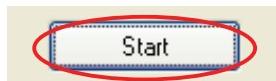
The following window will appear:



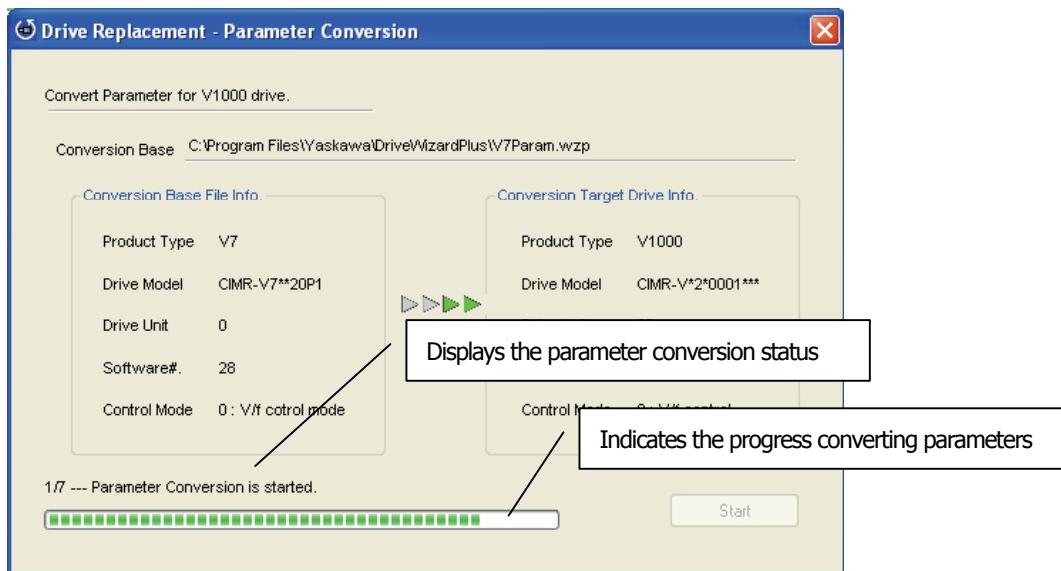
*Make sure that the information for the drive to be replaced and the new replacement drive is correct.



- 4) Click "Start".



The following screen will appear while the Parameter Conversion process is executed.



Once complete, one of the following windows will appear:

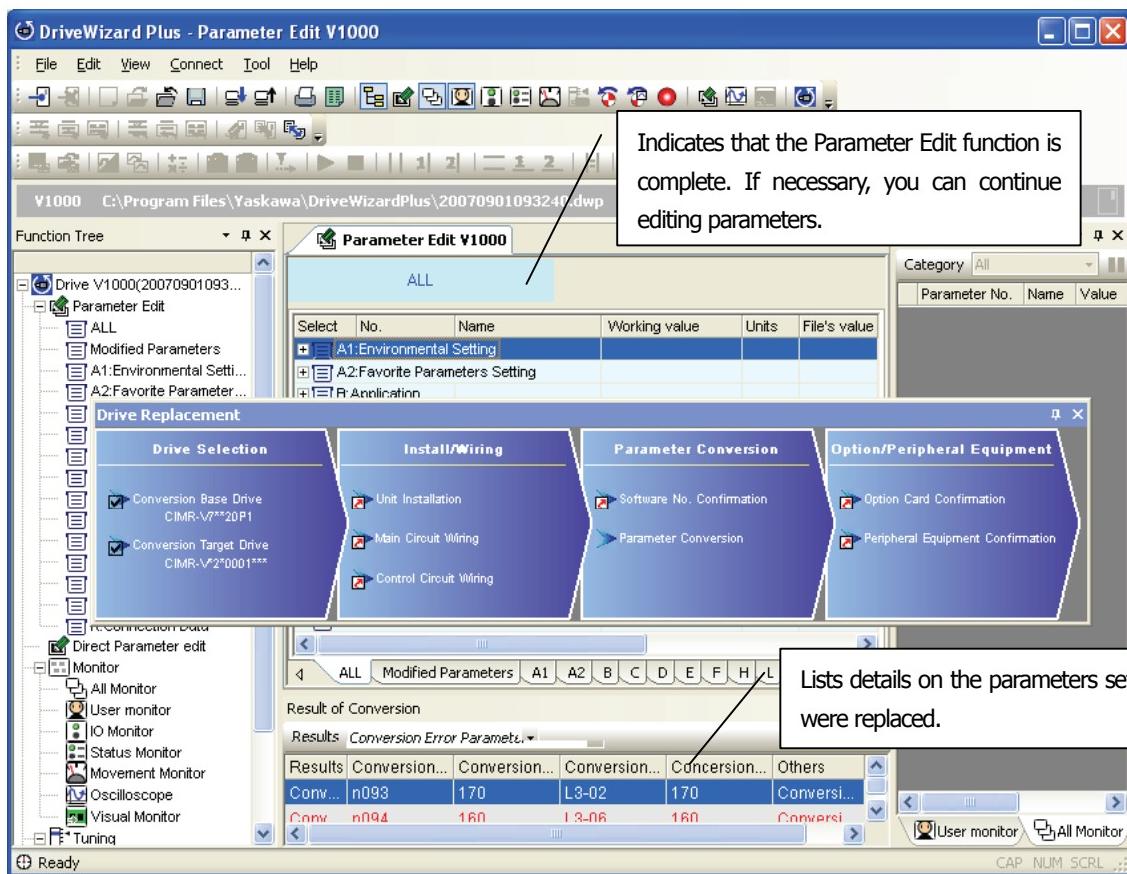
If Parameter Conversion was successful, the following message will appear:



If a fault occurred while converting parameters, then the following message will appear:



- 5) Click "OK" to execute the Parameter Edit function for new parameter settings that were recently updated. Results from the Parameter Conversion appear in the Conversion Results window.



4.7.4 Checking the Results from Convert Parameter

You can review the results from a Parameter Conversion to make sure that parameter settings are as expected. If the results from the Parameter Conversion are not already displayed, go to the Main Menu and open the View (V) menu. Select “Conversion Results”.

NOTE: Closing a Project will reset the results from a Parameter Conversion.

Results from a Parameter Conversion can be displayed separately using the drop-down menu as shown.

Result of Conversion					
Results	Conversion Error Parameter				
All Parameter					
Conversion Parameter	Conversion...	Concer...	Others		
Conversion Error Parameter		170	Conversion ...		
Skipped Parameter		160	Conversion ...		
Invalid Parameter					

Result of Conversion					
Results	Conversion Base No.	Conversion Base value	Conversion Target No.	Concer...	Others
Conversion...	n001	1	A1-01	2	
Conversion...	n002	0	A1-02	0	
Conversion...	n003	0	b1-02	0	
Skippe...	n004	0			Not Inte...
Conversion...	n005	0	b1-03	0	
Conversion...	n006	0	b1-04	0	
Conversion...	n007	0	o2-02	1	
Skippe...	n008	0			Not Inte...

Selecting “All” will convert all parameters displayed.

There are four types of results when performing a Parameter Conversion.

Type	Description
Normal	Parameters have been converted successfully for the replacement drive.
Fault	Parameters were not converted successfully. This may be due to parameter settings being beyond the allowable setting range. The Parameter Edit function can enter values beyond the allowable setting range, causing an error when those setting are then converted to values outside the setting range in the replacement drive. Confirm the replacement drive parameters.
No Match	Parameters in the older drive are not available in the newer replacement drive.
Not Compatible	Parameter Conversion was executed normally, but the parameter settings are incompatible. No parameters have been replaced, converted, or loaded onto the drive to be replaced.

4.7.5 After Parameter Conversion

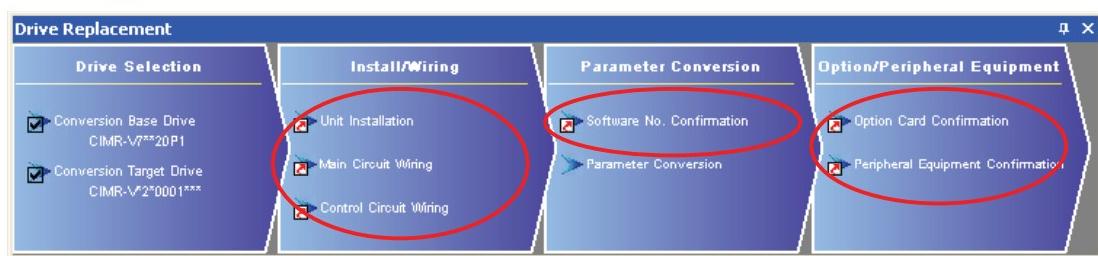
Once a Parameter Conversion has been successfully performed, you can choose to write the parameter settings to the new drive using the Parameter Edit function, or save the results as a Project.

4.7.6 Displaying Data Needed for Drive Replacement

The Drive Replacement window is divided as follows:

- Install/Wiring
- Parameter Conversion
- Option/Peripherals

Areas that still need to be addressed to properly replace the current drive with a newer model will display the icon 



5 DriveWizard Plus Database Update Utility

This function updates the version of DriveWizard Plus you are currently running on your PC.

NOTE: If a new update has been installed, it may take slightly longer than usual for DriveWizard Plus to open the first time as it fully installs the upgrade.

NOTE: After new software has been downloaded and registered, be sure to restart the software as well as cycle power to the drive.

NOTE: Occasionally there may be a problem when installing a software upgrade. It may even be necessary to completely uninstall and then reinstall DriveWizard Plus.

5.1 Opening a Database Update Utility

Use the Start menu to open a database update utility.

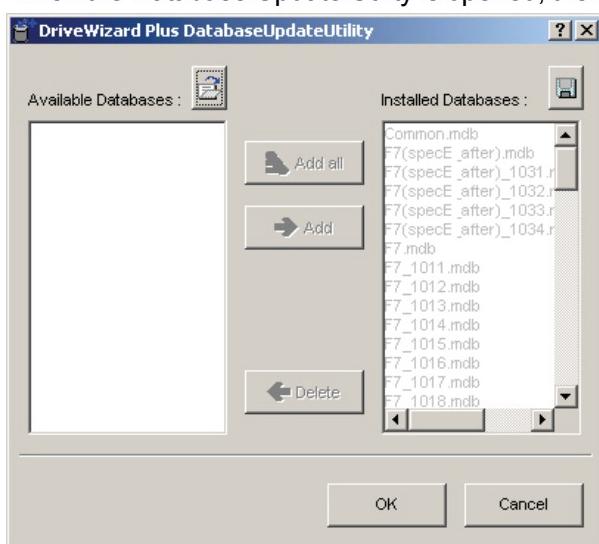
5.1.1 Starting a Session of DriveWizard from the Start Menu

Open a database update utility via the Start menu.

- 1) Click on the Start menu in the Windows® taskbar.
- 2) Select “Program”.
- 3) Open the “YE_Applications” folder.
- 4) Click on “DriveWizard Plus Database Update Utility”.



When the Database Update Utility is opened, the following window will appear:



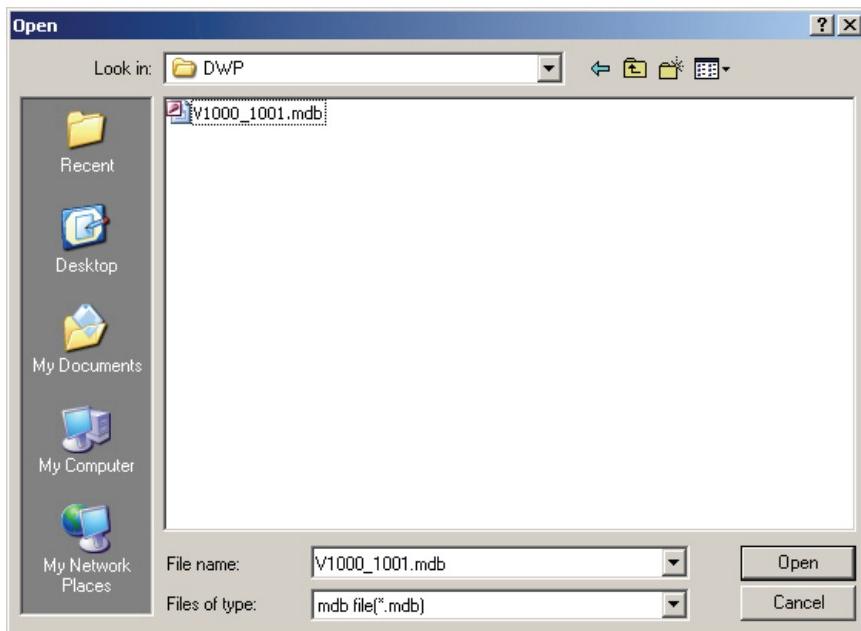
All software numbers registered in the database will appear on the right.

NOTE: Yaskawa cannot guarantee proper compatibility of all software versions listed here. Software versions may differ depending on the operating system they were designed for, in addition to other conditions regarding the installation environment.

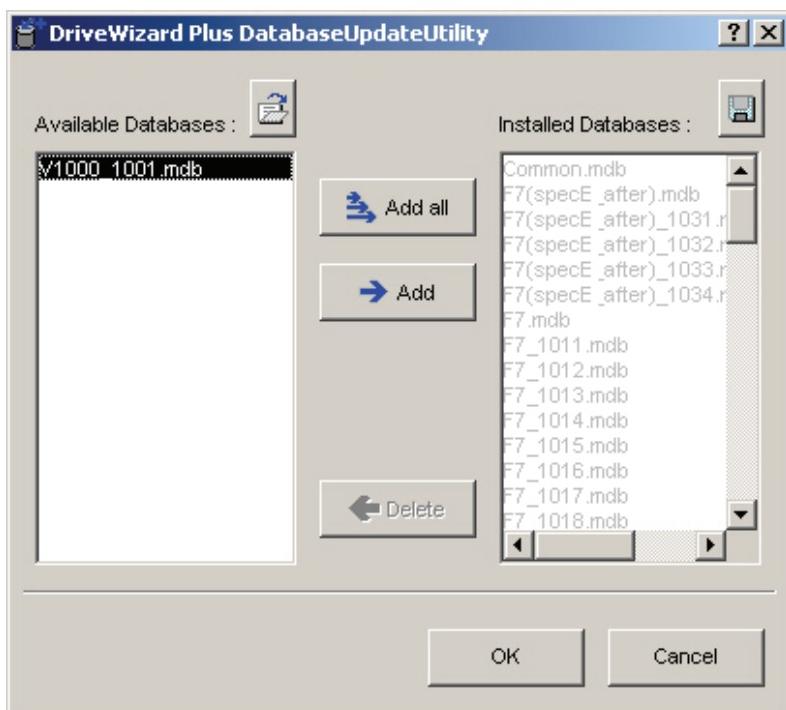
5.2 Registering New Software Data

NOTE: To update the instruction manual (i.e., the Help file), a utility has been prepared for your convenience. This file (HELP_*mdb) is included in the same folder with the instruction manual (PDF). This file must be stored in the same folder with the instruction manual for the update utility to work properly.

Click  to open the following window:

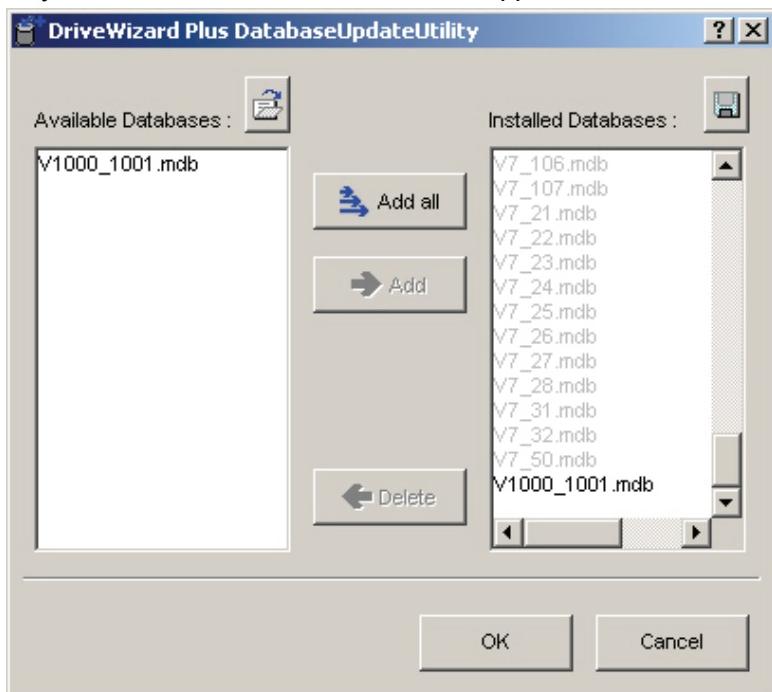


Select the file to update (*.mdb) and click "Open". Possible updates will appear in the dialog box on the left.



To add the possible update from the box on the left, select the file and then click "Add".
To add all possible files, click "Add All".

Any files that have been added will now appear in the box on the right.



When finished, click "OK" and selected software will be added.
The new data will become effective the next time DriveWizard Plus is opened.
If you decide not to install the updated files, click "Cancel".

Revision History

The revision dates and numbers of the revised manuals are given on the bottom of the back cover.

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Date of original Publication
Date of Publication

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			Addition: Auto-Tuning selections for the A1000
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DriveWizard Plus

Instruction Manual

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